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INFOSECURA

ENABLING A MEETING OF MINDS

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Contents

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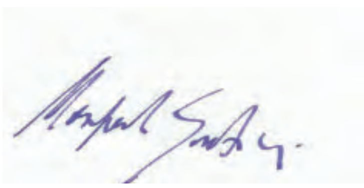
The online experience

In this issue of Infosecura we report extensively on Intergraf's first ever online conference, Currency+Identity Online on 24 to 26 April 2021. Because of the reasons the conference was held online, we sincerely hope it will be not only the first but also the last online Currency+Identity. The conference was, however, a success, not only in terms of numbers of attendees but also in terms of their composition. Of the 851 delegates coming from 76 countries, 53 per cent were printers and suppliers and 47 per cent representatives of were central banks, governments and law enforcement authorities. This is close to Intergraf's dream composition for the conference and probably has something to do with the fact that for official bodies, budgetary decisions and travel expenses could be happily ignored.

If the pandemic has been conquered by this time next year, we will all meet again in Lyon, a very good place to rediscover the pleasures of being with friends and colleagues again, meeting new people and enjoying the culinary and sensual experiences of Lyon and France in general.

Were there lessons to be learned from the online conference? Yes, certainly. A good online presentation delivered to a small screen in front of you is an effective way to get a point across. For exhibitors too, the possibility of explaining in detail their product is effective. The use of self-selected side-events, such as exhibitors round tables and 'Exhibitors Innovation Tracks' proved popular. The Intergraf Committee of Experts, that is responsible for the content of the Currency+Identity conferences, is already discussing whether and how any ideas that were tested in this online event could be incorporated into the next conference.

Another subject dealt with extensively in this issue is Central Bank Digital Currency, that is to say the future of money. Here the alternatives and the battle lines are relatively clear. In the end there will be a coexistence for both forms for quite some time. In the identity area, the issue is less clear cut, but the editor plans for the next issue and perhaps some issues after that, to seek the opinion of diverse experts on the 'future of identity'. It will be interesting to look at this subject as a whole, from the grand picture to the nitty-gritty. Any pointers to this end, within the next four weeks, say, are welcome.

The Editor 

A MEETING OF MINDS

Yes, it was a meeting of minds, as the bodies of the 851 participants in Intergraf's first ever online Currency+Identity conference had to stay home. But it was also a most successful conference and exhibition which won the praise of participants and exhibitors alike, delivering the opportunity to listen, to talk to speakers and exhibitors and examine in depth what they had to offer. And the next time, Intergraf will bring mind and body together again at Currency+Identity 2022 in Lyon, France.

After organizing Intergraf Currency+Identity for fourty-five years, albeit under several different names, Intergraf did not expect to be forced to try something entirely new; a version of its successful conference for the security printing industry worldwide held entirely online. But the covid pandemic has forced the whole word to change suddenly and especially the organizers of business conferences, the 'raison d'être' of which is to enable personal and business contacts between people face to face, had to adapt to the fact that their business model had changed.

So just like everybody else, Intergraf had to change, and it did. And just as it always did before, Intergraf, Banknotes+Identity again brought together 'issuing authorities and solution providers' from the two branches of the industry, the people that need to consider and decide on new banknote or passport

and ID card series, and those that develop new and improved ways to make these products more secure, more convenient to administer and use, and longer lasting and more sustainable.

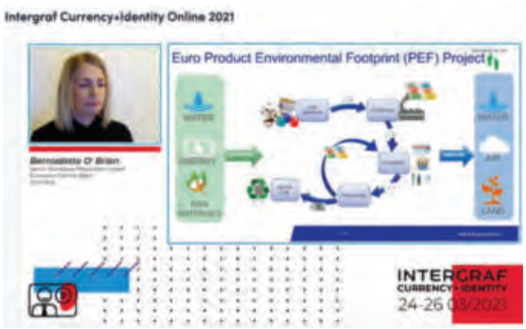
The online format may be new but Intergraf tried to follow well received precedent; Intergraf Currency+Identity followed an example set in Copenhagen in 2019 by opening the conference with a look at the future. This time it was Daniel Hulme who gave the keynote address on 'Artificial Intelligence and its impact on society'. Although the conference's far-flung viewers most likely wanted to get back to things as they were, Daniel Hulme did not spare the audience with the promise that Artificial Intelligence would over the coming few decades initiate massive changes in the way we interact with our environment, and each other.

Daniel Hulme delivering the keynote on camera

The keynote address, as well as the opening welcome, had to be delivered two times, as participants in the western hemisphere were given a six-hour time delay on the account of the different time zones. Unfortunately, the participants in Asia, the Far East and Australia/New Zealand had to stay up late to participate.

The three-day conference was especially informative on new banknote issues with contributions by the Danish and the Bulgarian Central Banks on updating their banknote series and a very unusual tale of a new issue of banknotes by the Central Bank of Trinidad and Tobago, which not only had to cope with a change from cotton to polymer banknote substrate but also with an unexpected demonetisation of one denomination and an extremely short timetable to produce the series (see article on page 5).

The potential for and of Central Bank Digital Currency was well covered by Sarah John who spoke about the thinking of the Bank of England on Central Bank Digital Currency. The environment received more attention than usual at the Intergraf conference. Bernadette O,Brien gave an account of the environmental sustainability of Euro banknotes, while Bertille Delaveau of the Banque de France reported on how central banks act against climate change. Finally, Nikki Strickland of De La Rue talked about the sustainability of how we pay and store value.



It was not only the official speakers delivering their presentations that provided the professional input, the exhibitors as well provided a wealth of information in their "Exhibitors Innovation Track" presentations and round tables, where they could speak directly to their existing or future costumers and explain their products in great detail. And personal chats, although at a distance, were also well used in various chat rooms.

In its online Guestbook Intergraf received some very appreciative mentions:
Well done to the Intergraf team and all who participated in difficult circumstances. Even though we were not physically together, it felt quite intimate and very relaxed. It was easier to concentrate than being in a large soporific conference hall! I do look forward to Lyon next year - all being well. I was very impressed by the website and how smoothly everything went.
Peter Wagner, FOSTER & FREEMAN LTD., United Kingdom

Congratulations to the Intergraf Team for taking up the challenge to organise an online conference on a worldwide scale. Hats off really. It went very well without any obstacles. I am a first time attendee and I am grateful to Intergraf Currency for the invite. The topics were very enriching and thought-provoking. Necessity is the mother of invention as it is said. May be there has been more attendees online than a live event. Looking forward for the next one. Congratulations once again.
Rajendra Gupta Ramnarain, MAURITIUS REVENUE AUTHORITY CUSTOM HOUSE, Mauritius

As it is difficult to judge the reaction to an online conference, Intergraf was especially happy about some of the comments of participants, speakers and exhibitors that illustrate well, how Intergraf's first online conference was received:

Speaker: *If I were to summarize my experience as a speaker, I would say that the success of the event was a reflection of the time and care Intergraf took in ensuring that each presenter was comfortable and aware of what was required at each step of the pre-conference planning process. Overall, time was effectively managed, and this allowed attendees to hear from, and interact with, a wide number of persons from diverse environments. The chat room type meetings among participants and exhibitors were also a huge plus for an event of this sort.*
Sharon Villafana, Central Bank of Trinidad and Tobago

Exhibitor: *Intergraf Online was super-well organised. The team were very friendly and efficient, quickly responding to any issues to ensure that the set up was as smooth as possible. The online platform was easy to use and worked really well for us. We made some interesting contacts during the event and are now busy following these up. We hope to see you in person next year!*
Sharon D'Cruz, Communications and Promotions Manager, Inspectron

Attendee: *In such unusual times, I was grateful for the opportunity to see, hear and chat with familiar faces. It was also uplifting to discover new topics and meet with new colleagues. I thoroughly appreciated the experience… But I am still very much looking forward to the next physical event!*
Fabrice Capiez, Banque de France

Intergraf agrees very much with Mr. Capiez feelings and is working already on the next conference: April 4th to 6th, 2022 in Lyon, France. Lyon is famous for its *joy de vivre,* its wine and its restaurants. It also hosts the headquarters of Interpol. Further reason to attend. ■

NOT ONLY GREENBACKS, BUT GREEN FRONTS AS WELL

Being green has become a serious matter and environmental monitoring has been extended to most parts of our daily lives, including how we pay and how far back the origins of our means of payment have to be examined. It seems that environmental responsibility extends to the cotton fields of Kazakhstan and to the blades of the wind turbine that make renewable energy. If we want to save the earth, it seems we have to save all of it.

When it comes to environmental considerations, non-material matters, such as bits and bites and indeed digital means of payments get a better press than the physical stuff. Dirty cotton paper and even polymer notes were accused of harbouring dangerous Covid pathogens – a myth quickly debunked – and even now there are shops that only allow payments via electronics rather than cash. However, the environmental standing of electronic currencies was severely dented when on March 6, Bloomberg News wrote that "The energy consumption from Bitcoin mining in China - which accounts for more than 75 per cent of Bitcoin blockchain operations globally as of April 2020 - is projected to peak in 2024 at around 297 terawatt-hours, generating 130 million metric tons of carbon emissions, according to the study from researchers at University of Chinese Academy of Sciences. This will will exceed the total energy consumption level of countries such s Italy and Saudi Arabia, the study said, and the carbon emissions will exceed the annual greenhouse gas emissions outputs of countries including the Netherlands, Spain and Czech Republic." And the way bitcoin is designed, ensures that the energy consumption in mining will only grow.

On the other hand, the production, circulation and destruction of cash is not entirely environmentally innocent either. The difference to Bitcoin is, however, that the environmental impact of cash is on a downward slope, at least in places like the EU. The subject of the environment and cash was dealt with by a presentation at Intergraf Currency+Identity Online in March, given by Bernadette O'Brien of the European Central Bank. Sustainability of Euro banknotes has environmental, social and economic aspects. Looking at the environmental ones, the Euro system consists of 19 national central banks plus the ECB and the Euro is produced using 22 raw materials by a total of 40 accredited manufacturers, including 12 printing works and six paper mills. All are subject to three environmental standards covering security, quality and environmental health and safety. The aim of the latter standard is the reduction of the environmental footprint of cash.

The ECB went through a long process to this end, starting with a Life Cycle Assessment (LCA) of the first series of the 3 billion Euro banknotes produced in 2003. The study followed ISO 14040 and – to used everyday equivalents – found that it had the same environmental impact as every European citizen driving a car for one kilometer or leaving a 69w bulb switched on for 12 hours.

The next measure taken was to introduce the environmental management system (EMS) of ISO 14001 in 2008 and to require every manufacturer to have an EMS implemented, and it to be annually reviewed by off-site inspections. Another requirement for manufacturers in the Euro chain is 'Environmental Data Monitoring', the annual collection of environmental data from all manufacturers via off-site inspections. The data recorded includes consumption of water, electricity, raw materials, emissions of VOCs, CO_2, waste, etc., the final destination of waste streams and environmental performance such as accidents and incidents.

A very important environmental factor is the length of life in circulation of banknotes. In 2012 the ECB began to coate the Euro banknotes starting with the € 5 and the € 10 in 2013. From 2021 onwards, a coated €20 will be produced. The varnish helps to extend the life of banknotes in circulation by approximately 50 per cent and reduces the environmental impact of producing banknotes correspondingly.

A further step of the ECB was the 'Sustainable Cotton Programme". In the Live Circle Assessment of the first series of Euros, the cotton fibre combers, a by-product of the textile industry, were identified as a key contributor to the environmental impact. In 2014, the Eurosystem began to replace standard cotton with sustainable cotton in banknote paper. The objective is to use 100 per cent sustainable cotton by 2023.

Another step in making the Euro more environmentally sustainable is looking at the waste produced in its manufacture. The ECB conducted a waste survey to gather all information on waste disposal in 2017 and 2018. This survey is now incorporated into the annual environmental data collection. The survey resulted in banning the use of landfill as a waste disposal method. The ECB also started R&D projects to focus on environmental recycling of banknote waste.

The ECB is assembling a whole system of environmental activities, which is embodied in the Euro Product Environmental Footprint (PEF) Project, set up to assess the environmental impact of Euro banknotes. PEF is a harmonized methodology developed by the European Commission to conduct environmental assessment of products.

It is based on the Life Cycle Assessment methodology, used in the environmental impact study of the first Euro series in 2004. The project has four phases: to define the goal and the scope of the PEF study, to compile a life cycle inventory, conduct the Life Cycle Impact Assessment and ending with Environmental Footprint reporting. The Euro may be a very small part of our combined environmental problems, but unlike Bitcoin, the Euro is set to become greener and thus improve the environmental sustainability of the world we live in.

A SOFT VOICE BUT LOTS OF INFLUENCE

The presentation of Ms. O'Brien showed what central banks, especially large ones, can do; set rules and standards and make sure they are followed by their suppliers. But that does not necessarily work on a world-wide scale, where voluntary cooperation and agreements often work better. One group that does not set any standards but nevertheless works very well in co-ordinating the work of central bank and financial supervising authorities in their aim to combat climate change is the "Network for Greening the Financial System". This voluntary group, which has its secretariat at the Banque de France and is chaired by Frank Elderson of De Nederlandse Bank, was created when in 2017, at the Paris 'One Planet Summit', eight central banks and financial supervisors decided to work together to pull their weight in environmental matters. Today there are 87 members and 13 observers in five continents. The group realised that climate change is a source of structural changes in the economic/financial system which have far reaching impact in breadth and magnitude, are foreseeable but irreversible and depend on short-term actions for mid/long term impacts. They ar also non-linear and have tipping points. As climate related risks are a source of financial risk, it is therefore within the mandate of central banks and supervisors to ensure that the financial system is resilient to these risks.

In her presentation at Intergraf Currency+Identity, Bertille Delaveau, of the Banque de France and member of the Secretariat of NGFS emphasized that the network is a coalition of the willing, aiming to identify and promote best practices, rather than a standard setting body. NGFS members have jurisdiction over supervision of 100 per cent of the global systemically important banks and two third of the global systemically important insurers, which translates into jurisdiction over around 75 per cent of global greenhouse gas emissions.

The reach of NGFS can be seen by looking at its five workstreams. There is WS1 on 'Microprudential and Supervision, MS2 Macrofinancial, MS3 on Scaling up Green Finance, a WS on Bridging the Data Gap and finally a WS on Research.

The first NGFS report, published in 2019, sets out six recommendations, four of them for 'Central Banks and Supervisors'. It recommends integrating climate-related risks into financial stability monitoring and micro supervision, integrating sustainability factors into own portfolio management, bridging data gaps and building awareness and intellectual capacity and encouraging technical assistance and knowledge sharing. There were also two recommendations for policy makers: Achieving robust and internationally consistent climate and environment-related disclosure and lastly, supporting the development of a taxonomy of economic activities.

To follow up on recommendations, the NGFS has been working on three practical guides for Central Banks and Supervisors: 1. Sustainable and responsible investment guide for Central Bank's portfolio management, 2. Guide for Supervisors: Integrating climate-related and environmental risks into prudential supervision, and 3. Guide on climate scenario analysis for Central Banks and Supervisors, along with the NGFS climate Scenarios.

The NGFS also released further documents to help members better assess climate related risk and plans to update several of the reports published in 2019/2020 to keep track of the initiatives and best practices among members.

SHADES OF GREEN

After the ECB's rules-based way of minimizing environmental impact of banknotes or payment methods and the cooperative model of defining and promoting best practises of the NGFS, Nikki Strickland of De La Rue looked at the place of cash in the general payment landscape and its environmental impact relative to other means of payment in her presentation, 'the sustainability of how we pay and store value'. She said that for many reasons, including environmental ones, the diversity of the payment landscape is important. If we are relying too much on just one method of payment, we are exposed to any problem inherent in that method, be it energy, raw materials or anything else. The cash supply chain, taken as a whole, sits somewhere in the middle of the energy use spectrum, generating higher emission than some non-material payment methods but far less than crypto-currency mining, data centres, ATMs and Point of Sale equipment. However, any method of payment we use has an environmental impact. Even digital payments need a huge physical infrastructure to operate. Thus reducing cash use is not an answer to environmental concerns.

Cash has an established and stable infrastructure. There are about 170bn banknotes issued every year, a figure that is moderately but steadily growing. Cash also has established routes to reduce environmental impact. On the digital side, there was a three-fold increase in data centre output of CO_2e, from 159.3 MT-CO_2e in 2010 to 494.9 MT in 2020, a figure set to increase further. Even if renewables are projected to hit 50 per cent of total energy produced by 2030, the damage is huge. If we look at the relative output of CO_2e in Megatons (MT) in 2020, annual banknote issuance – used by 7.7 bn people - accounted for 27 MT, bitcoin mining – used by 0.04bn people – clocked up 37 MT and smartphones, used by 3.6 bn people, accounted for 144MT. Although smartphones are not only or even mainly, used for payments, their environmental impact is still large. Looking at the same three use-cases per capita, annual banknote issuance produces 3.5 MT of CO_2e, Bitcoin 1 057,1 MT and Smartphones 45.1MT. This shows that cash has a vital role to play in ensuring environmental, social and economic sustainability. Cash is safe and ubiquitous, which cannot be said for electronic payments. In 2019 there were 200 deliberate internet shutdowns in 33 countries, and financial losses across payment cards, remote banking and cheques totalled £1.2 billion in 2019. Moreover, 1.1 billion people do not have access to electricity and 1.7 billion people are unbanked and did not have access to digital services in 2017.

Given the environmental position of cash, there are some things that could further improve its environmental performance: cash cycle optimisation, appropriate banknote durability and cooperation. Importantly, the choice of substrate of the banknotes could be tailored to the needs of the cash cycle.■

PUBLIC AND PRIVATE MONEY CAN COEXIST IN THE DIGTAL AGE

The International Monetary Fund, or IMF, promotes international financial stability and monetary cooperation. It also facilitates international trade, promotes employment and sustainable economic growth, and helps to reduce global poverty. Its primary mission is to ensure the stability of the international monetary system of exchange rates and international payments that enables countries and their citizens to transact with each other. What the IMF thinks about the choice between cash and digital money is therefore highly relevant.

The future of banknotes ultimately depends on decisions taken by central banks, the only institution to issue public money. Publicly issued money and banknotes are not necessarily the same thing. While in just about all countries, except perhaps China and the Bahamas, cash is the only form of central bank issued money, private money makes up a large part of issued money in almost all countries. A blog published by the International Monetary Fund in February explains eloquently that public and private money can successfully co-exist and contribute greatly to the economy.

In the now ubiquitous dual monetary system, money issued by banks of all types, or specialized payment providers, is built on a foundation of publicly issued money by central banks. Under this system the private sector offers much of the necessary innovation and product diversity, while stability and efficiency are ensured by the public sector. Given die delicate balance between the two, countries and central banks have to navigate it.

One factor threatening this balance is technology and especially digitalisation and the question is how the dual monetary system will evolve. If cash is being digitized – as CBDC – will private money be displaced or will it flourish even more. While acknowledging that the first is always possible, the blog's authors argue that both form of money can co-exist and they also insist that central banks should not be forced to chose between either offering CBDC or encouraging the private sector to develop its own solutions, as both forms can complement each other, as they have done throughout history.

PUBLIC-PRIVATE COEXISTENCE

Both forms of money have a fundamental symbiotic relationship: the option to redeem private money into perfectly safe and liquid public money, be it notes and coins, or central bank reserves held by selected banks.

The private monies that can be redeemed at a fixed face value into central bank currency become a stable store of value. This arrangement hides complex underpinnings: sound regulation and supervision, government backstops such as deposit insurance and lender last resort, as well as partial or full backing in central bank reserves.

Privately-issued money becomes an efficient means of payment because it can be redeemed into central bank currency. When an amount in Bank A is transferred into another account in Bank B because it is redeemed into central bank currency in between—an asset both banks trust, hold, and can exchange. As a result, this privately-issued money becomes interoperable. And so it spurs competition and thus innovation and diversity of actual forms of money.

The option of redemption into central bank currency is therefor essential for stability, interoperability, innovation, and diversity of privately-issued money, be it a bank account or other. A system with just private money would be far too risky. And one with just central bank currency could miss out on important innovations. Each form of money builds on the other to deliver today's dual money system—a balance that has served us well, the authors conclude.

CENTRAL BANK CURRENCY IN THE DIGITAL AGE WILL FACE PRESSURES

But what will become of the system in the digital age? Will CBDC overshadow private money, or will they still allow for private sector innovation? Much depends on each central bank's ability and willingness to consistently and significantly innovate. Keeping pace with technological change, rapidly evolving user needs, and private sector innovation is no easy feat.

The authors think that central banks would have to become more like Apple or Microsoft in order to keep central bank digital currencies on the frontier of technology and in the wallets of users as the predominant and preferred form of digital money.

But innovation in the digital age is orders of magnitude more complex and rapid than updating security features on paper notes. Central bank digital currencies may initially be managed from a central database, though might migrate to distributed ledgers (synchronized registries held and updated automatically across a network) as technology matures, and one ledger may quickly yield to another following major advancements.

User needs and expectations are also likely to evolve much more quickly and unpredictably in the digital age. Money may be transferred in entirely new ways, including automatically by chips imbedded in everyday products. These needs may require new features of money and thus frequent architectural redesigns, and diversity. Today's, or even tomorrow's, money is unlikely to meet the needs of the day after.

Pressures will come from the supply-side too. The private sector will continue innovating. New eMoney and stablecoin schemes will emerge. As demand for these products grows, regulators will strive to contain risks. And the question will inevitably arise: how will these forms of money interact with the digital currencies issued by central banks? Will they exist separately, or will some be integrated into a dual monetary system where the private and central bank offerings build on each other?

A PARTNERSHIP WITH THE PRIVATE SECTOR REMAINS POSSIBLE

The authors suggest that in order to keep with the pace of change of technology, user needs, and private-sector competition, which will be a challenge for CBDC, central banks could encourage the private sector to innovate on top of it. By accessing an open set of commands ("application programming interfaces"), a thriving developer community could expand the usability of central bank digital currencies beyond offering plain e-wallet services, such as developing functions for automated payments, etc. The challenge will be vetting these add-on services so they are perfectly safe.

Some central banks may even allow other forms of digital money to co-exist—much like parallel operating systems—while leveraging the settlement functionality and stability of central bank digital currencies.

As long as these forms of digital money are redeemable into central bank currency (digital or non-digital) at a fixed face value by being fully backed by central bank currency, they would be a stable store of value. And they would be efficient means of payment, as settlement would be immediate on any given digital money network—just as it is between accounts of the same bank. And networks would be interoperable as movements between accounts at different money providers would be settled with a corresponding move of central bank currency, just as in today's dual system.

This form of digital money could well co-exist with central bank digital currency. It would require a licensing arrangement and set of regulations to fulfill public policy objectives including operational resilience, consumer protection, market conduct and contestability, data privacy, and even prudential stability. At the same time, financial integrity could be ensured via digital identities and complementary data policies. Partnering with central banks requires a high degree of regulatory compliance.

A SYSTEM FOR THE AGES

If and when countries move ahead with central bank digital currencies, they should consider how to use the private sector. Today's dual-monetary system can be extended to the digital age. Central bank currency—along with regulation, supervision, and oversight—will continue to be essential to anchor stability and efficiency of the payment system. And privately-issued money can supplement this foundation with innovation and diversity—perhaps even more so than today. Where central banks decide to be on the continuum between private-sector and public-sector involvement in the provision of money will vary by country, and ultimately depend on preferences, technology, and the efficiency of regulation. ■

ECB AND BOE: THE NEXT STEPS TOWARDS CBDC

In an interview with «The Economist» , the president of the European Central Bank, Christine Lagarde, expressed the hope to introduce a digital Euro in 2025. Much would need to be done before that date. In a presentation at Intergraf Currency+Identitiy on March 26, the BoE's Simon Scorer added the thinking and the planning of the of the Bank of England to this subject.

Digital currency is still one of the most often talked about subjects in 'money circles'. There are now plenty of private digital currencies around which compete with each other, with interest in them periodically peaking and flattening again. In the middle of February, the price of bitcoin rose to $50,000 for the first time, and Tesla, an electric-car maker, said it had bought $1.5bn-worth of bitcoin and would accept it as payment for its cars. However, bitcoin's chances of ever becoming a real currency are slim. Its inefficiencies and transaction costs are just too high for this to happen.

The real action in digital currencies is therefore to be found in central banks, many of which are pondering issuing their own digital currencies. The Bank for International Settlements, the members of which are central banks, last month said it expects one-fifth of the world's population will have access to a central-bank digital currency (CBDC) by 2024. Although the Bahamas already have CBDC, among large nations it is China that is most advanced, having completed a large-scale test involving the issuance of 10m yuan ($1.5m) to 50,000 shoppers in Beijing in February. It has also announced a joint venture with SWIFT, an interbank-messaging system used for cross-border payments, which puts the Chinese project firmly inside the international system, rather than, as some suspected, setting up a rival system to escape the dollar influence. Sweden, another champion, has extended its pilot project.

Even the European Central Bank (ECB) seems to get serious about CBDC. In January it finished a public consultation, which had over 8 000 responses. Speaking to *The Economist* on February 10th, Christine Lagarde, the ECB president, said she planned to seek approval from her colleagues to begin preparing for a digital euro. A decision was expected in April. Ms Lagarde hopes the currency will go live by 2025.

The attraction of ECB digital currency is that it would offer consumers a digital tender that is as safe as physical cash as, unlike bank deposits, a claim on central bank reserves carries no credit risk. Transactions in digital Euros could be settled instantly on the central bank's ledger instead of using the services of card networks and banks. This would also provide a back-up system in case that eletricity outages or cyber-attacks cause private payment channels to fail.

A digital Euro could also have a macro-economic/political role by encouraging foreign central banks to increase their Euro holdings as reserve currency, which presently stands at about 20 per cent versus 60 per cent for the US dollar. This would enable cross-border transactions to be settled in CBDC, which would be faster, cheaper and more secure than using a network of 'correspondent' banks. That could make the digital Euro attractive to businesses and investors.

Ultimately, a digital Euro would be one of many central bank digital currencies, but, according to the 'Economist', its main attraction would be the level of privacy that would surpass that offered by the US dollar or the Chinese yuan. The former uses its financial system to enforce sanctions; the latter seeks control. But even the digital Euro may not be totally unsupervised: the European Union still wants to be able to track cash that is being laundered or hidden to dodge taxes. One fix could be to let users open e-wallets only once they have been vetted by banks, but leave the use of the digital currency itself unmonitored.

Another problem is that, if very successful, a digital Euro could divert deposits from banks and thus threaten the availability of credit. To avoid this, the ECB may consider either a ceiling on the amounts users can hold in ECB accounts, or as Fabio Panetta, a member of the ECB's executive board, suggested on February 10th, charging penalties above a certain threshold. Given that many legal details, e.g. on 'settlement finality' and others, vary across the Euro zone, the introduction of a digital Euro would also necessitate many legal reforms across the 19 Euro countries.

THE VIEW OF THE BANK OF ENGLAND

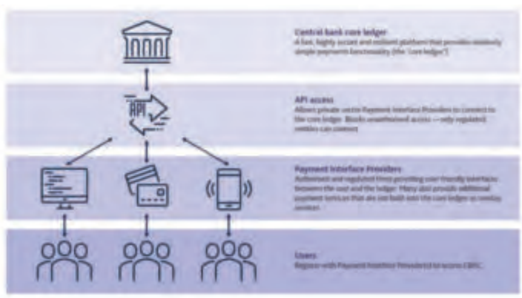
The thinking of the Bank of England on CBDC is not very different to that of the ECB. Use of cash in the UK has declined just as in many other countries, standing at 28 per cent in 2018, and probably significantly lower now. The money used for payments in the UK is now predominantly private with current accounts, - a claim on the commercial bank as opposed to cash which is a claim on the central bank - nowbeing the dominant means of payment.

So how would CBDC fit into this. Currently the central bank provides two types of money, physical cash which is universally accessible and reserves, which are electronic but only accessible to banks. Unlike cash, CBDC would be an electronic form of money but unlike reserves it would be a public form of money universally accessible. Mr. Scorer defined CBDC as an electronic form of central bank money that can be used by households and businesses to make payments. Unlike stablecoin and e-money it would be a direct liability of the central bank and its value would not fluctuate such as bitcoin, etc. A CBDC 10 pound will be the same as a physical 10 pound note, but it will not a replacement for cash, which the BoE is committed to issue as long as the public is prepared to use it.

In explaining the work done on CBDC at the BoE, Mr. Scorer emphasized that the bank has not yet taken a definite decision on whether or how to introduce CBDC, but he had some thoughts on why CBDC might be useful: it may support a resilient payment landscape, avoid the risk of new forms of private money creation, support competition, efficiency and innovation in payments, meet the future payment needs in a digital economy, improve the availability and usability of central bank money, address the consequences of a decline in cash and provide a building block for better cross-border payments.

How to actually manage and operate CBDC is still debated. The BoE has ruled out that it would be the sole provider of all CBDC-related services, saying that there would likely be a significant role for the private sector to provide innovative and competitive user-facing services, given their experience in providing these services.

The BoE has developed a platform model of CBDC which consist of a 'central bank core ledger', a fast, highly secure and resilient platform that provides relatively simple payments functionality. Next is API access which allows private sector Payment Interface Providers to connect to the core ledger. It would block unauthorized access, only regulated entities could connect. The Payment Interface Providers, are authorized and regulated firms providing user-friendly interface between the user and the ledger. They can also provide additional payment services that are not built into the core ledger as overlay services. The users would register with the Payment Interface Provider to access CBDC.



The platform model of CBDC

graphic: Bank of England

The question of which technology the BoE may use is also still debated with policy decisions and the required functionality influencing the best technology approach. The BoE does not presume that CBDC must be built using DLT – Decentralized Leger Technology – a more conventional centralized technology approach could also work. However, some aspects of DLT may well be worthy of further exploration.

Any decision on CBDC must support, or at the very least, do no harm to the bank's monetary policy and financial policy objectives which include financial stability. A shift of commercial bank deposits to CBDC could impact 'steady state' bank funding and profitability and broader credit conditions. In periods of financial stress, bank runs could occur more frequently with CBDC available. On monetary policy, CBDC should be designed to co-exist with cash to ensure that monetary policy decisions can be effectively implemented.

Mr. Scorer said that the BoE continues to work on a number of key areas, among them the economic implications and design choices of CBDC, the functional design and the required technology.

There has also been a very interesting discussion paper on the Bank of England website which gives the view of the bank on CBDC in greater detail entitled 'Central Bank Digital Currency - Opportunities, Challenges and Design', published in March 2020.

The latest move of the BoE was to announce on April 19, the joint creation of a Central Bank Digital Currency (CBDC) Taskforce to coordinate the exploration of a potential UK CBDC. It is to ensure a strategic approach between the UK authorities as they explore CBDC and to promote close coordination between them. The Taskforce will coordinate exploration of the objectives, use cases, opportunities and risks of a potential UK CBDC; guide evaluation of the design features a CBDC must display to achieve the BoE's goals, support a rigorous, coherent and comprehensive assessment of the overall case for a UK CBDC and monitor international CBDC developments to ensure the UK remains at the forefront of global innovation.

The Taskforce will be co-chaired by Deputy Governor for Financial Stability at the Bank of England, Jon Cunliffe, and HM Treasury's Director General of Financial Services, Katharine Braddick. As appropriate other UK authorities will be involved in the Taskforce. The Bank of England has also announced that it will establish a CBDC Unit also overseen by Jon Cunliff. Also a CBDC Engagament Forum and a CBDC Technology Forum has been announced.■

A TALE OF TWO UPDATES . . .

The headline could also have been 'a tale of two cities' Copenhagen and Sophia in this case. In the update of their currency, the Danes kept their nordic, minimalist cool, while the Bulgarians were telling uplifting stories of writers and poets, educators and painters.

Denmark, along the other Scandinavian countries of Sweden and Norway, is usually thought of being dangerously close to going cashless. In her presentation at Intergraf Currency+Identity Online on March 24, Bolette Møller, Head of Cash Supply at Danmarks Nationalbanken gave figures about the decline in cash use in her country, which now stands at only 10 per cent. And it is not only the young that have gone almost exclusively electronic in their payment habits, cash use among the 70 to 79 years old has gone from in 40 per cent in 2017 to 20 per cent in 2019. Today, that figure is down to 16 per cent. However, there seems to be a difference between the emotional attachment to a national currency and the frequency at which it is used, as the reaction to a national campaign explaining the new upgraded series of the Danish Kroner showed. This was a very positive surprise, as Ms. Møller recalled.

The reluctance of Danes to use cash is certainly not due to fears of counterfeits. Although the number of registered counterfeit banknotes rose from 672 in 2019 to 727 in 2020, only 409 of these were found in circulation, mainly forged kr. 1000 notes. Thus counterfeit banknotes account for less than four banknotes per million in circulation, based on a total number of banknotes in circulation of 187.8 million. This is a very limited number in an international context

Yet, in spite of the obvious lack of urgency, the National Bank decided to issue a new series of the Danish Kronor in 2018, less than 10 years after the last one. Well, not quite a new series, but an upgrade of the series that was launched in 2009. In that year, the National Bank of Denmark had launched a design competition around the overall theme of bridges to connect people to their surroundings and historical artefacts to connect them to their history. The artist that won and was finally behind that series, Karin Brigitte Lund, gave it an elegantly minimalist and appropriately 'nordic' feeling through the use of one dominant colour and by leaving much of the substrate white, as we wrote at the time (Infosecura 41, September 2009).

While producing an upgrade is normally not very challenging, in the Danish case it was quite a radical departure. Denmark used to have its own banknote printing works, one of the smallest in Europe, printing at the time 90 million banknotes for 5.5 million Danes and separate banknotes for the Danish dependency of the Faroe Islands. It was also one of the last banknote printers to use the web process. After the production of the last series, substantial investments had come due and instead of updating the equipment, the Danish National Bank decided to close its printing works in 2014. Going to a private banknote printer meant changing from web production to sheet production. The inhouse production had also used a specific cutting method which was very accurate and that was no longer available in sheet printing.

By 2018, a new supplier had been found, Ms. Møller did not say which one, but as the bank's website writes that production had been outsourced to France, it is likely to be Oberthur. The first note to be released was the 500 Kroner on November 17, 2020. In the next few years, other denominations of banknotes are also due to be issued in new versions.

The change of production technology meant that there had to be a compromise between the web-way of producing banknotes and the sheet-way. Ms. Møller said that such a compromise had been found and that it was indeed a very successful one. Due to a wider availability of inks and colours as well as increased use of intaglio the number of security features had been increased from 14 to 19 and even of these, three had been further upgraded.

At first glance there is not much difference between the original and the upgraded note. The most visible one the that the broad window thread has been moved from the back of the note to the front. It is now the dominant security feature. The coloured printed stripe on the edge of the note is not a security feature but simply a way to quickly identify the value of the note. The main image on the front, in the case of the 500 Krone, the Dronning Alexandrines Bro, has remained the same, as has the prehistoric artefact on the back, the bronze pail from Keldby, which is repeated in the holograph, combined with micro printing (on the left bottom of the front of the note.

The back of the note also remains visually mostly unchanged, with the image of the bronze pail and the area where it was found next to a map showing the location of the bridge and the site of the discovery of the pail. Here all the land areas of the map are made up of microprinted lines. The banknotes are printed on cotton paper that has received the Anti Soil Treatment.

The watermark, that is to be found on all denominations in the same position, shows a Viking Ship from Skuldelev in Roskilde Fiord, together with the denomination 500. All banknotes will have the same signature colours as the previous series from 2009 i.e. violet, orange-yellow, green, blue and red. The new banknotes will be in circulation together with the old ones, and no banknotes will become invalid.

SAME GOAL, DIFFERENT OUTCOME

Just like the National Bank of Denmark, the Bulgarian National Bank recently introduced a new version of its currency, the Lev. And just like in Denmark, the Bulgarian National Bank thought that the public was not ready to accept a new design for its currency. The Lev had served Bulgaria well, promoting the civil society of the country in the general population aside from politics. The series that formed the base of the latest transformation was issued in 1999 and after the fall of communism ten years earlier, and instead of portraits of present or past heads of state, it conveyed a sense of pride in the cultural values of a country, ready to join its neighbours in Europe. In his talk at Intergraf Currency+Identity on March 25, Kalin Hristov, Deputy Governor, Issue Department of the Bulgarian National Bank, said that cash is still very popular in his country and the volume of banknotes in circulation in Bulgaria is very high and growing. In 2020 there were 547,7 million Lev notes in circulation, which, with a population of 6.9 million, amounts to 79 banknotes per capita. In Denmark, the Danish National Bank's last published figures on banknots in circulation is 172 million, at a population of around 5,680 million, amounting to around 30 banknotes per capita.

Since its exit from the Soviet block, the country had gone through some economically difficult times with high inflation in 1996, which led to the number of denominations being expanded to 13. At that time, the bank's printing works printed all of Bulgaria's currency. When the economy stabilized and Bulgaria pegged the Lev to the D-Mark and later to the Euro, the number of denominations was reduced to five but this reduction lead to excess printing capacity. In order to gain access to the international banknote production market and also to the latest technology, in 2013 the National Bank of Bulgaria entered into a joint venture with the French security and banknote printer Oberthur Fiduciaire, which in now printing the Lev in its printing works in Sophia.

The current upgrade is the second one, there was one previous upgrade between 2005 and 2009. Mr. Hristov said that the reason for the second upgrade was not primarily to counteract counterfeiting, which is not very high, but to upgrade the security features and also to improve the machine readability of the banknotes, as the cash cycle had become more governed by electronics and increasingly Lev notes were issued through ATMs.

The first note to be upgraded in the latest series was the 100 Lev note in 2018 followed by the 50 Lev in 2019 and the ten and five Lev in 2020.To use the 50 Lev note (€25, $ 30) as an example, the most visible difference is a new hologram stripe with optical effects on the left side of the front of the note, the RollingStar LEAD. It is used in the 50 and 100 Lev in 13 and 14 mm width. In the lower denominations, 10, 11, and 12 mm wide Micromirror LEAD is used. While the original in the 1999 version showed alternating images of a bird (an element of the design on the reverse of the banknote), the figure 50 and the word LEVS appearing as miniprint, which change their colour when seen from a different angle. The newest version, when the stripe is tilted, shows alternating images of a bird, icarus, a coloured hologram

portrait, a book changing its colour from gold to green when tilted, a 'flame' dynamic effect with change of colour from gold to green and a 3D image of the number 50. The denomination number - 50- features Sicpa SPARK Live. There is a strong link between the intaglio printed portrait of the writer Pencho Slaveykov, the main feature of the note, and the same portrait as a halftone watermark and as an image in the hologram stripe. Mr. Hristov mentioned especially the cooperation with Louisenthal for the paper with the watermark, Sicpa amd Oberthur Fiduciaire for the printing.

A major theme of the banknote's reverse side are Slaveykov's poems: the national epic "A Song of Blood", and a set of plates from his anthology "Epic Songs". The facsimile shows a page of its first edition. The poet's intimate lyricism forms a second theme, represented by the "Dream of Joy" anthology, and a portrait of his great love - fellow poet Mara Belcheva, who was also his biographer. Represented is also an illustration of a bird from one of his books of poetry, and the banknote's nominal value given in figures and in words.

The same poetess, Mara Belcheva, also features as a somewhat ephemeral figure on the note when looked at under UV light, which also shows Slaveykov. The reverse side also shows the window thread RollingStar Thread in width of 2,5 to 4 mm.

Another interesting addition is the feature for the visually impaired: There was, and still is, a two-part symbol in the bottom right corner of the obverse side of the note, two triangles facing each other on the Lev 50 note and different shapes on the other denominations. Now on either edge, there is an array of four thick and seven thin lines at an angle, with the number of thick/thin lines varying according to the denomination. ■

. . . AND A NEW LAUNCH

A completely different set of challenges was experienced by the Central Bank of Trinidad and Tobago, when they took the radical decision to change just about every aspect of their banknotes. In the TT Dollar series in circulation up to 2015, it was found that the features aiding the visually impaired could no longer be used in older notes printed on cotton substrate. It was decided to change the substrate from cotton paper to De La Rue's Safeguard polymer substrate and also to change the visual design of the note completely. To test the water a little, the TT$ 50, the first note to be so redesigned, was issued first as a commemorative note in 2014 and as a circulation note in 2015. While the note was acknowledgd as being very beautiful, - it was the IBS 'banknote of the year' in 2014 - the public did not accept it as a means of payments, only as a kind of keepsake. The banking industry as well had problems with processing polymer substrate with a window, and only two commercial banks agreed to use the note in ATMs.

But this experience, Ms. Sharon Villafana, Manager of Banking Operations at the Trinidad and Tobago Central Bank, said in her presentation at Online Currency+Identity, was most valuable for the bank in finding out what the consumers and the banks really needed from a banknote and how to communicate with both. So it was back to the drawing board. While the shift to polymer was confirmed, a new design for the whole series, one that was much closer to the old series, was developed. A new addition, to increase popular acceptance of the polymer series, a lively, fluttering national flag was also added, which proved to be very popular.

The one that didn't make it

The timetable for putting the notes into circulation was suddenly upset, when the Ministry of Finance suddenly decided that all cotton TT$ 100 notes, which were mainly used as a store of value, were to be demonetized by 31st December 2019 and to be completely replaced by polymer notes. The time allowed for this sudden change was only one month. With the help of the printer, De La Rue, the TT$ 100 notes were designed, printed and delivered and met the deadline. The central bank, however, had to continue with conditional exchanges of cotton 100 TT$ notes until April 1st, 2020. As for the rest of the series, the TT$ 5, $10 and $ 20 were issued in November 2020 and the $ 1 and $50 in February 2021.

In looking back at this experience Ms. Villafana said that the bank found that things can be done a lot faster than one thinks, that to use the skills of the vendor (printer) is most important, as is an effective communication strategy. To put the experience of Ms. Villafana into perspective, it should be added that Trinidad and Tobago has a population of 1.4 million and the value of banknotes in circulation is TT$ 9.5 billion (US$ 1.5 billion).■

... and the one that did

CROATIA TO JOIN SCHENGENLAND

The Covid pandemic not only reduced inter-European travel to a trickle, it also greatly reduced the movements of refugees into the European Union. But the forces that make people flee their homelands are still there, Covid or not, and the flow of asylum seekers will certainly swell again, once the pandemic is over. And there will be soon another extension to the external borders of the EU: Croatia.

Although in the time of Covid, border crossings have been reduced, crossing an international border is an experience that most of us are familiar with. The experience can reach from almost unnoticeable to almost lethal, and there are plenty of examples every day, where trying to cross a border is indeed lethal. On the benign end of the border subject, Croatia's Prime Minister Andrej Plenkovic said on March 16 in an interview with Politico that it is reasonable to expect that Croatia would join the Schengen Zone, the European Union's (EU) passport-free travel area, by the second half of 2024. The European Commissioner for Home Affairs Ylva Johansson and the Portuguese Presidency announced that Croatia had met the requirements to join Schengen during a meeting of EU interior ministers in March 2021.

According to Croatia's leader, the country will also be part of the Eurozone by the same year. Last year, Croatia was accepted to the European Exchange Rate Mechanism (ERM II), which is one of the key steps towards the Eurozone.

Croatia has met 281 recommendations including 145 recommendations involving external border control necessary to comply with Schengen regulations, including taking the required measures to ensure the security of the EU's external border. In doing so it has successfully completed its 4-year evaluation.

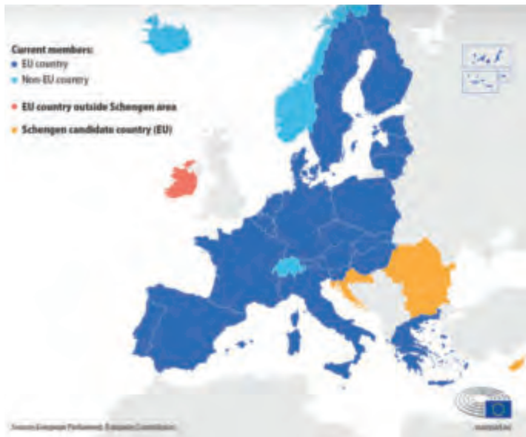
The European Commission had already concluded in October 2019 that Croatia had met all the technical requirements to enter the Schengen Zone. However, the European Parliament had continuously criticized Croatia for the brutal treatment of migrants by the police authorities.

Unlike some Schengen member countries, such as the Czech Republic and Luxembourg, which are entirely surrounded by other Schengen member countries, Croatia borders Bosnia-Herzegovina in the South and Serbia in the North-East, which are neither EU nor Schengen members, and it will therefore be within the operational zone of the EU European Border and Coast Guard Agency Frontex. As one key issue for border forces, both national and EU's Frontex, is immigration into the Schengen Area from the Western Balkans, Croatia's role in protecting the region's external border will assume increasing importance in the post-Covid era. Both Croatian and EU authorities emphasise the importance of a comprehensive unilateral approach to migration.

The Croatian Ministry of the Interior said it had continued to invest in improving the capacity of the border police, including providing training and technical equipment. Croatia has also been making efforts to meet the other criteria, including laws regarding data protection and firearms.

The EU has provided Croatia with additional funding to help strengthen its border. This appears to have paid off now that the country has been evaluated and judged to meet Schengen standards. Dimitris Avramopoulos, EU Commissioner for Migration, promised further financial support in the future.

Today, the Schengen area encompasses most EU countries, except for Cyprus, Ireland, Bulgaria, Croatia and Romania. However, the latter three are currently in the process of joining the Schengen Area and already applying the Schengen acquis to a large extent. Additionally, also the non-EU States Iceland, Norway, Switzerland and Liechtenstein have joined the Schengen Area.



FREEDOM AND SECURITY FOR TRAVELLERS

The Schengen provisions abolish checks at EU's internal borders, while providing a single set of rules for controls at the external borders applicable to those who enter the Schengen area for a short period of time (up to 90 days).

The Schengen area relies on common rules covering in particular the following areas: crossing the EU external borders, including the types of visa needed, harmonisation of the conditions of entry and of the rules on short stay visas (up to 90 days), cross-border police cooperation (including rights of cross-border surveillance and hot pursuit), stronger judicial cooperation through a faster extradition system and the transfer of enforcement of criminal judgments, the Schengen Information System (SIS) and documents needed for travelling in Europe.

POLICE CHECKS AND TEMPORARY BORDER CONTROLS

Any person, irrespective of their nationality, may cross the EU's internal borders without being subjected to border checks. However, the competent national authorities can carry out police checks at internal borders and in border areas, provided that such checks are not equivalent to border checks. The non exhaustive list of criteria allowing to assess if police checks is equivalent to border controls is set out in the Schengen Borders Code. The Code is complemented by relevant case-law of the Court of Justice. It includes the following elements: the police checks do not have border control as an objective, are based on general police information and experience, are carried out in a manner clearly distinct from systematic border checks on persons at the external borders, are carried out on the basis of spot-checks.

TEMPORARY REINTRODUCTION OF BORDER CONTROLS

If there is a serious threat to public policy or internal security, a Schengen country may exceptionally temporarily reintroduce border control at its internal borders. If such controls are reintroduced, the Member State concerned has to inform the Council (and thus, other Schengen countries), the European Parliament and the European Commission as well as the public. The Commission provides information on the current situation at the internal borders at its website

THE ORIGINS

Originally, the concept of free movement was to enable the European working population to freely travel and settle in any EU State, but it did not abolish border controls within the Union. That was done in 1985 in the Luxembourg village Schengen with the signing of the Agreement on the gradual abolition of checks at common borders, followed by the signing of the Convention implementing that Agreement in 1990. The implementation of the Schengen Agreements started in 1995, initially involving seven EU countries.

Born as an intergovernmental initiative, the developments brought about by the Schengen Agreements are now partof the body of rules governing the EU.

A BIGGER ROLE FOR FRONTEX

Securing the external borders of the European Union is the job of the respective national governments. With being at or very close to one of the main migration route into the EU, Croatian borderguards will have their work cut out. But they are not alone. The European Border and Coast Guard Agency (Frontex) is there to assist national border police forces in their duties. The agency, headquartered in Warsaw, has currently a staff of 1500, which are employed mainly, but not exclusively, at the crossing points of the main migration routes, e. g. the eastern, central and western migration route and the EU external border. One of the most sensitive hotspots are the Greek islands close to the Turkish mainland as well as points on the Hungarian-Serbian border, where Frontex has been accused of not intervening fast or forceful enough when national border forces were said to have attempted to stop migrant reaching the EU. One of the reasons may have been a lack of sufficient personnel. The agency plans to hire some 8,500 more border agents by 2027. Frontex hopes this will help to tackle cross-border crime and to assist EU states to control their frontiers and return migrants within the framework of the EU's migration policy. A look at this document shows the difficulty the EU faces in controlling (or minimizing) migration and combatting the reasons why people want or need to migrate in the first place.

In order to reduce the numbers of those entering the block, the EU set up the "EU Emergency Trust Fund for Africa" (EUTF) and earmarked 4.3 billion euros (February 14, 2018) to fight "the root causes of irregular migration", as the Fund's tagline states. The projects of this fund often fall into the category of ameliorating the situation on the ground: empowering the youth in Ghana, enhancing living conditions in Ethiopia or increasing food security in Mali for example. But only about half of the money goes to such projects. The numbers show that stopping migrants along the way is at least equally important as changing the underlying causes of migration.

The European commission thinks that Frontex needs to grow to fill its role. Its budget leapt from under €100m ($123m) in 2014 to €280m by 2017, reaching almost €400m last year. Under the EU's budget for 2022-29, Frontex is due to get €5.6bn for the seven-year period—half of what it originally hoped for, but a tidy sum nonetheless. The agency has also been given the right to recruit personnel and buy equipment directly, rather than borrowing both from member states. Its standing corps is on track to grow to 6,500 staff this year, with the aim of reaching 10,000 by 2027. ■

GETTING ON THE ROAD - OR INTO THE AIR - AGAIN

Travel is still for too many of us a distant dream or a fond memory. But there are already many who could be travelling relatively safely, those that have been vaccinated. To prove that fact, a vaccination passport would seem a simple answer, but the subject has been turned into a hotly contested dispute in many countries. And as proof of vaccination is especially important in an international context – to enable travelling – an international solution is needed, urgently. IATA has a suggestion to remedy the situation

While governments are talking, IATA is developing a system that could satisfy the requirements of most countries: the IATA Travel Pass. This is a mobile application under development, allowing travellers to store and manage certifications for COVID-19 tests or vaccinations. The information provided through the IATA Travel Pass can be used by governments requiring testing or vaccination proofs as a condition of international travel during and after the COVID-19 pandemic. A critical aspect is the fact that the information supplied is verified. According to IATA, it is more secure and efficient than current paper processes managing health requirements (e.g. International Certificate of Vaccination or Prophylaxis). This is important given the potentially enormous scale of testing or vaccine verifications that will need to be securely managed. With this app, IATA also aims to provide governments with the confidence to reopen borders without imposing quarantines on incoming travelers.

The IATA Travel Pass will help people to travel while meeting any government requirements for COVID-19 tests or vaccines. It will incorporate four open sourced and interoperable modules which can be combined for an end-to-end solution:
- Global registry of health requirements – to find accurate information on travel, testing and vaccine requirements for journeys

- Global registry of testing/vaccination centers – to identify testing centers and labs at departure location which meet the standards for testing and vaccination requirements of the destination

- Lab app – to locate authorized labs and test centers to securely share test and vaccination certificates

- Digital passport module - to enable passengers to create a 'digital passport', receive test and vaccination certificates and verify that they are sufficient for their itinerary, and share testing or vaccination certificates with airlines and authorities to facilitate travel.

This app can also be used by travelers to manage travel documentation digitally throughout their journey, improving the travel experience.

GOVERNMENTS DECIDE THE REQUIREMENTS TO TRAVEL; AIRLINES AND PASSENGERS NEED TO COMPLY

Traditionally there have been visa and vaccination requirements in many countries. Due to the COVID-19 pandemic governments have imposed additional restrictions: quarantine measures, testing requirements and eventually vaccination requirements. IATA Travel Pass will be a tool for travelers but one that communicates with governments, airlines, and test centers/vaccination providers to get verified information to those who need it in a safe and secure manner.

To re-open borders without quarantine and restart aviation, governments need to be confident that they are effectively mitigating the risk of importing COVID-19. This means having accurate information on passengers' COVID-19 health status. The IATA Travel Pass could be a means to this end.

On March 9, IATA announced that recently, trials with Qantas, Gulf Air and Air Baltic had been agreed. There was significant interest in trials from airlines across the globe and strong interest from dozens of governments. The Governments of Latvia and Panama have publicly endorsed the Travel Pass. The discussions with key government and UN institutions have one simple message – that Travel Pass is a key support for the safe reopening of borders. As a sign of its support, ICAO also features the IATA Travel Pass on its website.

The IATA Travel Pass app is now available for download on the Apple Store but travelers will not be able to use it unless their airline is part of a trial (information correct on 29.4.2021). Airlines participating in one of these trials, can give travellers instructions on how to use the IATA Travel Pass. ■

A DIFFERENT KIND OF FADO

Its not sad Portuguese music, but its about detecting counterfeit personal and travel documents. This requires international coopertion and a very good electronic reference system. The EU is relying on one that has worked well since 1998.

Given the number and diversity of ID documents issued and used the world over, authorities would be hard pressed to tell the genuine from the counterfeited without a comprehensive and reliable reference system. In addition, to be of practical use in border situations it would have to be fast and easy to access and provide answers to queries in a matter of seconds. The European Union created such a system back in 1998, then called the 'European image archiving system' that was managed by the Council General Secretariat.

Meanwhile vastly extended and improved, the archiving system has been renamed the 'False and Authentic Documents Online' system (FADO) and with the implementation of the European Border and Coast Guard Regulation, responsibility for FADO has been transferred to the European Border and Coast Guard Agency (Frontex). Among the aims of the system is to prevent irregular migration in the EU. The online image-archiving system allows images of genuine and false travel documents to be shared rapidly amongst EU nations, a valuable tool in the fight against document and identity fraud. With FADO, EU authorities as well as national police officers and border guards can share information about genuine and fake documents, primarily Visas, Passports, driving licenses, resident permits and civil status documents.

The database is available to the general public as well as to European authorities. The Public Register of Authentic Travel and Identity Documents Online (PRADO) is the public component of the system. PRADO can be accessed by individuals, businesses, and organisations to check the authenticity of documents.

Given that the information stored in the FADO database is accessible to authoritative figures and the general public, data protection is a key consideration. In order to abide by the EU's data protection law, the minimum amount of personal information necessary for FADO is processed. For additional security, when possible individuals should not be identifiable from the data.

The extent of the document and identity fraud, and therefore the relevance of FADO, can be seen by looking at the number of refused entries due to fake documents across the EU. Eurostat data shows the number of individuals who were stopped from entering each EU Member State between 2010 and 2019 because they were found to have falsified travel documents, visas or residence permits, identified with the help of FADO. Across the EU, the total number of persons refused entry to an EU country because they had a fake travel document, visa, or residence permit rose from 5,050 in 2010 to 7,545 in 2019. Notably, the number of people stopped from entering the EU with false travel documents during the period fell from 2,585 in 2010 to 1,835 in 2019 whilst the false visa and residence permit detection increased from 2,465 to 5,710.

It is also worth noting that increases and decreases are not lineal. The detection of fake visas and residence permits dipped to 2,100 in 2013 before climbing again to reach its 2019 peak. Similarly, 2018 saw a slight rise in fake travel documents compared to the 2 previous years, despite a downwards trend over the period as a whole. By looking at the statistics on a national level, it is possible to see which EU Member States are most affected by attempted identity fraud and fake documentation.

With respect to false travel documents, France is the member state which refused entry to most people with a fake passport or another false travel document. The highest number recorded was in 2018 when 885 people were found to be carrying fraudulent travel documents. 2019 saw a marked improvement as the number dropped to 515. Nevertheless, this remains significantly higher than the country with the second-highest statistics: Hungary reported 305 cases in 2019. At the other end of the scale, neither Norway nor Iceland have had to refuse entry to foreigners attempting to use fake travel documents.

Regarding false residence permit or visas, Ireland is the country with by far the highest number of refused entries based on false visas or residence permits. In 2019, 4,940 of the 5,710 refused entries reported across the EU occurred in Ireland.

The Schengen countries most affected by fake visa and residence permit use are Spain and France, both of which deal with hundreds of cases each year. During the period, the number of people attempting to enter France with a fake visa or residence permit has halved, from 330 in 2010 to 155 in 2019. On the other hand, statistics have remained fairly stable in Spain which registered 200 incidents in 2010 and 195 in 2019. Norway, Iceland, Sweden, the United Kingdom, and Liechtenstein did not refuse entry to any individuals for having a fake visa or residence permit.

To understand peaks and troughs across the period, it can be useful to look at world events occurring at the time and the effects these had on individual member states and the EU as a whole. The following years stand out when analysing the data: 2011; false visa or residence permit jumps from 90 to 555 in Germany, before falling to 70 in 2012.

2012: The year with highest refused entry to the EU due to fake travel document. False travel document denial in Poland rises from 20 to 110 (before declining to 10 by 2019). An exceptionally large number of refused entries to Greece, 1,060 attempts to cross the border with false travel documents, by 2019 the number is just 25.

THE NEXT STEP: ETIAS

FADO is just one of the ways in which the EU is working towards strengthening borders and preventing irregular immigration. The European Travel Information and Authorisation System (ETIAS) is to be launched in 2022 with the aim of boosting public safety. Unlike FADO, ETIAS is aimed at travellers who do not need a visa for Europe.Currently, citizens of more than 60 third-countries can cross an external EU border using just a valid passport. Once ETIAS is active, these travellers will be prescreened and issued a visa waiver before being granted access.

Applicants register for ETIAS online, providing some basic personal information and passport details. ETIAS data protection will be thorough, encryption will prevent unauthorised copying of details. This information is cross-checked against EU security databases, potentially dangerous individuals will be refused the travel authorisation and unable to cross the border legally. On approval, ETIAS is attached to the electronic chip in the passport, it will be extremely hard for criminals to create a fake visa waiver. Along with FADO, ETIAS should make it even more difficult for criminals to enter Europe using fraudulent documentation. ■

THE BEACH HOLIDAY IS ALMOST IN SIGHT

As the world seems to be moving slowly into a post-Covid mode – although the precariousness of the situation is still being illustrated by the desperate situation India finds itself in - not only trade associations such as IATA but government organisations as well, are getting active to enable travel again. In one of its latest moves, on April 27, the European Commission proposed to introduce a Green Pass to restore freedom of movement in Europe.

International travel, both the tourism and the business variety, is an important part of the European economy. Spain, Italy Greece and France have been severely impacted by the general travel ban. Now the European Commission proposed on April 27 to introduce a 'Digital Green Pass' to restore freedom of movement in Europe. Although it is called "Digital Green Pass' there will be a physical version as well. It will also include a QR code to secure citizens' data and to avoid fraud.

Following a European Parliament vote on March 25th to fast-track the implementation of this Digital Green Pass, also known as the Digital Green Certificate, the EU health certificate is now expected to be operational by the end of June 2021. This travel document is going to allow EU citizens to move safely within the European Union during the COVID-19 pandemic. According to EU Commission President, Ursula von der Leyen, the EU will strengthen the region's response to coronavirus with the rollout of the "Digital Green Pass for free and safe movement in the EU."

In March, von der Leyen wrote on social media that the legislative proposal for a Digital Green Pass would provide proof that a person has received the vaccine. However, it will also be available to those holding a negative test result on COVID-19 or who have gained immunity after being infected. The goal is to "gradually enable citizens to move safely in the European Union or abroad." Travelling to and within the EU during the pandemic has been limited to essential travel only. The green pass would restore freedom of movement in Europe.

This European coronavirus certificate will be accessible and secure, non-discriminatory and meant to store and manage only essential information and secure personal data. The Green Pass will cover 3 types of certificates: Vaccination, COVID-19 tests such as NAAT and PCR or a rapid antigen test and certificates for persons who have recovered from COVID-19.

All EU nationals and residents will get the green pass free of charge. As inter-operability is always a major concern, the European Commission will "build a gateway to ensure all certificates can be verified across the EU." The EC will also support Member States with the implementation of the COVID certificate.

WHEN WILL IT BE IMPLEMENTED?

On March 25th, the European Parliament voted to fast-track the Digital Green Certificate via an urgent procedure. The vote was 468 to 203, with 16 MEP's abstaining. In an official statement following the vote, the EU declared that "legislative and technical work on COVID-19 interoperable and non-discriminatory digital certificates, based on the Commission proposal, should be taken forward as a matter of urgency". However, European citizens will still have to wait a while before they can freely travel. EU Commissioner for Justice Didier Reynders assured MEPs that the technical infrastructure for the Green Certificate would be ready by the end of June 2021. EU member states had formally agree to launch the Green Pass on April 14. According to a document released by national envoys, all 27 countries have "underlined their commitment to have the framework ready by the summer of 2021". The European Parliament has yet to make a final agreement on the plan, but it seems that the Green Certificate for the EU will indeed arrive by summer 2021.

INTEROPERABILITY WITH THIRD COUNTRIES

The Digital Green Certificate's validity and interoperability beyond Europe are deemed essential for certain EU countries that are eager to restart tourism and business travel. While EU Member States such as Spain and Greece are talking to third countries to regain pre-pandemic tourism, Ursula von der Leyen announced on April 25th that vaccinated US travellers could be eligible for visiting Europe this summer. American citizens "as far as I can see, use European Medicines Agency-approved vaccines," which could mean it would be possible to "enable free movement and the travel to the European Union".

TECHNICAL SPECIFICATIONS APPROVED

Member States have agreed on technical specifications for the Digital Green Certificate after a European Commission meeting on April 22nd, 2021. The eHealth network has published a set of guidelines that will ensure the recognition and interoperability of certificates across the EU. Technical specifications cover data structure and encoding mechanisms including a QR code for paper and digital versions that can be read in all EU countries. There also will be EU Gateway that will allow the authenticity of certificates to be verified across the EU. Personal information will not go through the gateway, only data required for verification. Reference implementations for issuing software, an app to verify certificates, and wallet apps for storage of certificates are also part of technical specifications. The technological infrastructure can now be implemented at an EU level and deployed by the individual Member States to meet the roll-out by June 2021.

The certificate will be valid until the end of the COVID-19 pandemic, while PCR tests and quarantine in Europe will continue to enable free movement of the population. In other words, the vaccine is not a precondition for free movement.

A PASSPORT TO HELP THE TRAVEL INDUSTRY

The pandemic has had a damaging impact on EU business travel and tourism. The green pass could contribute to boosting travel. Tourism in Europe provided 27 million jobs and generated 10 per cent of the EU's GDP. Some EU partners, like Germany, have reservations about a vaccine passport, while countries that depend heavily on tourism, like Spain, Italy, and Greece, have supported its approval. Greece already has a deal to welcome Israeli citizens if they have a vaccine passport. Cyprus will accept British nationals from May 1, but they must have two doses of an approved European Medicines Agency (EMA) vaccine.

The green pass is mainly a certificate of vaccination and coronavirus testing showing that a person has received the vaccination or a test and will not contribute to spreading the virus. This means that a holder of a green certificate could travel safely and visit tourist attractions, festivals, and restaurants or bars.

CONCERNS AROUND THE GREEN PASSPORT

The motivations behind the swift roll-out of the Green Certificate are focused primarily on re-starting travel and tourism across Europe as quickly as possible.

Despite the strong vote in favour of the quicker timeline, the proposal has raised concerns among certain members of the European Parliament. Among the key concerns were a reduction in the relevancy of MEPs due to the fast-track process, data protection of EU citizens and inclusivity and discrimination.

Regarding data protection, Didier Reynders stated that there would be no central database at an EU level for citizens' Green Certificates. High standards of security in line with the EU's data protection and privacy laws is a priority for those designing the Green Pass system, he said.

Some argue that a "vaccine passport" is not inclusive as it will separate those who got the vaccine from those who did not. Proponents of the certificate argue that the three ways of proving that travellers are coronavirus-free shows that the scheme is not discriminatory towards those who have not been vaccinated.

Reynders has said that non-discriminatory policies and EU data protection strategies remain vital concerns for the Commission. Approval of the Digital Green Pass is expected to bring back freedom of movement within the EU as well as help reignite tourism in the Schengen Area without jeopardizing public health. ■