



Funded by
the European Union



Digitalisation of identity documents and residence permits issued to third-country nationals

European Migration
Network Inform

March 2024

Disclaimer

This inform has been produced by the European Migration Network (EMN), which comprises the [EMN National Contact Points \(EMN NCPs\)](#) in EMN Member (EU Member States except Denmark) and Observer Countries (NO, GE, MD, UA, ME, AM, RS), the European Commission and the EMN Service Provider (ICF). The inform does not necessarily reflect the opinions and views of the European Commission, the EMN Service Provider (ICF) or the EMN NCPs, nor are they bound by its conclusions. Similarly, the European Commission, the EMN Service Provider (ICF) and the EMN NCPs are in no way responsible for any use made of the information provided.

Explanatory note

This inform was prepared on the basis of national contributions from 25 EMN NCPs (AT, BE, BG, CY, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, NL, PL, PT, SE, SI, SK and GE, UA) collected via an AHQ developed by the EMN NCPs to ensure, to the extent possible, comparability. The information contained in this inform refers to the situation in the abovementioned EMN Member and Observer Countries up to August 2023.

Published

March 2024

Suggested citation

European Migration Network (EMN), 'Digitalisation of identity documents and residence permits issued to third-country nationals - EMN inform', [Date], [URL], last accessed on [day month year].

For more information

EMN website: <http://ec.europa.eu/emn>

EMN LinkedIn page: <https://www.linkedin.com/company/european-migration-network>

EMN Twitter account: <https://twitter.com/emnmigration>

EMN YouTube page: <https://www.youtube.com/channel/UCp4RiZkN1NlggtpSIFvVzkg>

Image: © shutterstock (cover)

Icons made by Freepik from www.flaticon.com and vecteezy.com

CONTENTS

1. KEY POINTS TO NOTE	4
2. INTRODUCTION	4
Main aim and scope of the inform	4
3. STATE OF PLAY	5
Current use of digital-only documents in EMN Member States and Observer Countries	5
Experience of using physical residence permits and Identity documents	6
Experience of using digital-only documents	7
Ongoing plans for digitalisation of documents and processes	7
4. POTENTIAL FOR USING DIGITAL-ONLY DOCUMENTS	8
Public acceptance of digital-only documents	8
Operational considerations for issuing digital-only residence permits and identity documents	8
Legal aspects and fundamental rights requirements	9
EU-wide recognition of digital-only residence permits and identity documents	9
Lessons learned from using EU COVID Certificate	9



1. KEY POINTS TO NOTE

This inform examines the state of play in 25 EMN Member and Observer Countries¹ of the digitalisation of identity documents and residence permits issued to third-country nationals.

- Overall, **most EMN Member States and Observer Countries do not issue digital-only residence permits and identity documents to third-country nationals.**
- **Italy, Lithuania and Poland are the only EMN Member Countries that currently issue digital-only residence permits and/or identity documents to third-country nationals.** High numbers of arrivals and applications for residence resulting from Russia's war of aggression against Ukraine have encouraged authorities in Italy, Lithuania and Poland to adopt digital-only documents and digitalised procedures. **The countries that have introduced digital-only documents tend to assess them most positively.**
- **Several EMN Member and Observer Countries identify advantages associated with issuing digital-only documents to third-country nationals.** Digital documents are considered more secure, while digitalised production and procedures can save national authorities resources, time and money.
- **There are some concerns about issuing digital-only residence permits and identity documents to third-country nationals.** Digitalisation initiatives must ensure that less digitally adept individuals are not left behind and must therefore provide for fall-back solutions, especially where in relation to a person's legal status, ability to use their rights, or access services. Several EMN Member Countries expressed concerns about the potential for fraud and counterfeiting of digital-only documents, as well as their misappropriation via physical and electronic means.
- **Solutions are needed to ensure the interoperability and verifiability of digital-only documents across borders and during border checks. As a result, digital-only documents are currently used on their own solely in a national context** and must be accompanied by physical travel documents at border controls.
- **If the use of digital-only residence permits and identity documents were to become widespread, action at European Union (EU) level would likely become necessary** to ensure a continued common approach to implementing visa policy and managing the EU's external borders.



2. INTRODUCTION

Main aim and scope of the inform

This inform offers an overview of current practices in EMN Member Countries and two Observer Countries (Georgia, Ukraine) on the digitalisation of identity documents and residence permits issued to third-country nationals. The analysis is based on contributions by 23 EMN Member Countries,² as well as Georgia and Ukraine.

The primary focus of this inform is on residence permits. However, the analysis includes EMN Member and Observer Countries' experiences of issuing residence permits³ and identity documents⁴ to third-country nationals, as

well as other identity documents authorising residence or travel.

'Digitalisation' is understood here as both issuance of digital-only documents and digitalisation of the application and processing procedures for digital-only documents, at national and EU level.

This inform compiles views from national authorities on the challenges and advantages of introducing digital-only documents. It considers their feasibility, security, and facilitation of individuals' fundamental rights to the protection of their private life and personal data.

1 AT, BE, BG, CY, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, NL, PL, PT, SE, SI, SK and GE, UA.

2 AT, BE, BG, CY, CZ, DE, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, NL, PL, PT, SE, SI, SK and GE, UA.

3 A document issued by the authorities of an EU Member State authorising a third-country national to stay in its territory, including the documents substantiating the authorisation to remain in the territory under temporary protection arrangements or until the circumstances preventing a removal order from being carried out no longer apply, with the exception of visas and residence authorisations issued during the period required to determine the responsible EU Member State as established in Regulation (EU) No 604/2013 (Dublin III Regulation) or during examination of an application for international protection or an application for a residence permit.

4 A document issued by a State authority to an individual providing evidence of their identity.

3. STATE OF PLAY

Current use of digital-only documents in EMN Member States and Observer Countries

The majority of EMN Member and Observer Countries,⁵ do not issue digital-only identity documents or residence permits to third-country nationals.

As per EU legislation, in particular Regulation (EC) No 1030/2002,⁶ amending Regulation (EU) 2017/1954⁷ and Commission Implementing Decision C(2020)2672,⁸ residence permits issued to third-country nationals include biometric data and at least one standardised machine-readable electronic identification chip. However, the permits themselves are still generally issued as physical documents.

This is the case in four EMN Member and Observer Countries,⁹ which issue e-resident digital identity documents and e-residence cards, respectively. These remain physical documents following manufacturing standards but offer electronic solutions for functionalities such as authentication, verification, or electronic signature. The e-resident digital identity documents in Estonia can be used by third-country nationals as electronic signatures for public and private law contracts, but do not grant the right to reside in Estonia. Slovenia recently introduced new identity cards containing a digital certificate (in the form of a chip), allowing for identification, authentication and e-signing. Similarly, the e-residence cards in Georgia are used for identification, authentication and e-signing, and must follow manufacturing standards set by national law. Ireland currently issues ePermits in PDF format for various immigration schemes, which can be used to support an application to obtain permission to remain but are not intended to replace the physical Irish residence permit card.

Three EMN Member Countries¹⁰ issue digital-only identity documents or residence permits. These include digital-only residence permits in Italy and Lithuania, and identity documents in Poland, all of which were adopted and used for beneficiaries of temporary protection fleeing Russia's war of aggression against Ukraine.

Box 1. Adoption of digital-only temporary residence permit in Lithuania

On 18 January 2023, Lithuania started issuing digital-only temporary residence permits for beneficiaries of temporary protection fleeing Russia's war of aggression against Ukraine. The residence permit is

issued in PDF format and delivered via the Lithuanian migration information system (MIGRIS). The attached QR code enables the authenticity and validity of the document to be checked.

The permit is issued in Lithuanian and English and can be printed out or saved on a phone. It contains the following information: name(s) and surname(s); place of birth; facial photograph; the individual's personal identifying number in Lithuania; citizenship; sex; date and place of issuance of the permit; permit expiration data; permit number; permit type (temporary); grounds for issuing the permit.

Box 2. Introduction of Diia.pl for beneficiaries of temporary protection in Poland

As foreseen in Article 10(1) of the Law of 12 March 2022 on assistance to citizens of Ukraine in connection with the armed conflict on the territory of this state, Poland's Ministry of Digital Affairs developed a digital identification document. The tool, 'diia.pl' is accessible via the 'mObywatel' application, which Polish citizens can use to access a variety of administrative services. Diia.pl can be used to confirm identity and fulfils the role of a temporary permit for residence in Poland. Holders can also use it to prove their identity when accessing services and interacting with public entities. The tool was also used as part of the assistance provided in response to Russia's war of aggression against Ukraine. Holders may use diia.pl to move within the Schengen area for up to 90 days in any 180-day period. In conjunction with a valid travel document, diia.pl can also be used to cross the EU's external border.

The electronic document includes a facial photograph, name and surname, personal identifying number in Poland, nationality, and date of birth. Diia.pl and official guidance to use the tool are fully available in Polish and in Ukrainian.

Latvia issues identity card for third-country nationals in physical form. This card allows identity verification and enable the holder to access public services (notably e-services) and to use the card for electronic identification and e-signing. A foreigner's identity card is not a travel document and does not certify their right of residence in Latvia. Since August 2021, Italy has offered digital-only residence permits to third-country nationals who are family members of EU citizens.

5 20 EMN Member Countries: AT, BE, BG, CY, CZ, DE, EE, ES, FI, FR, HR, HU, IE, LU, LV, NL, PT, SE, SI, SK.

6 Council Regulation (EC) No 1030/2002 of 13 June 2002 laying down a uniform format for residence permits for third-country nationals, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32002R1030>, last accessed on 16 January 2024.

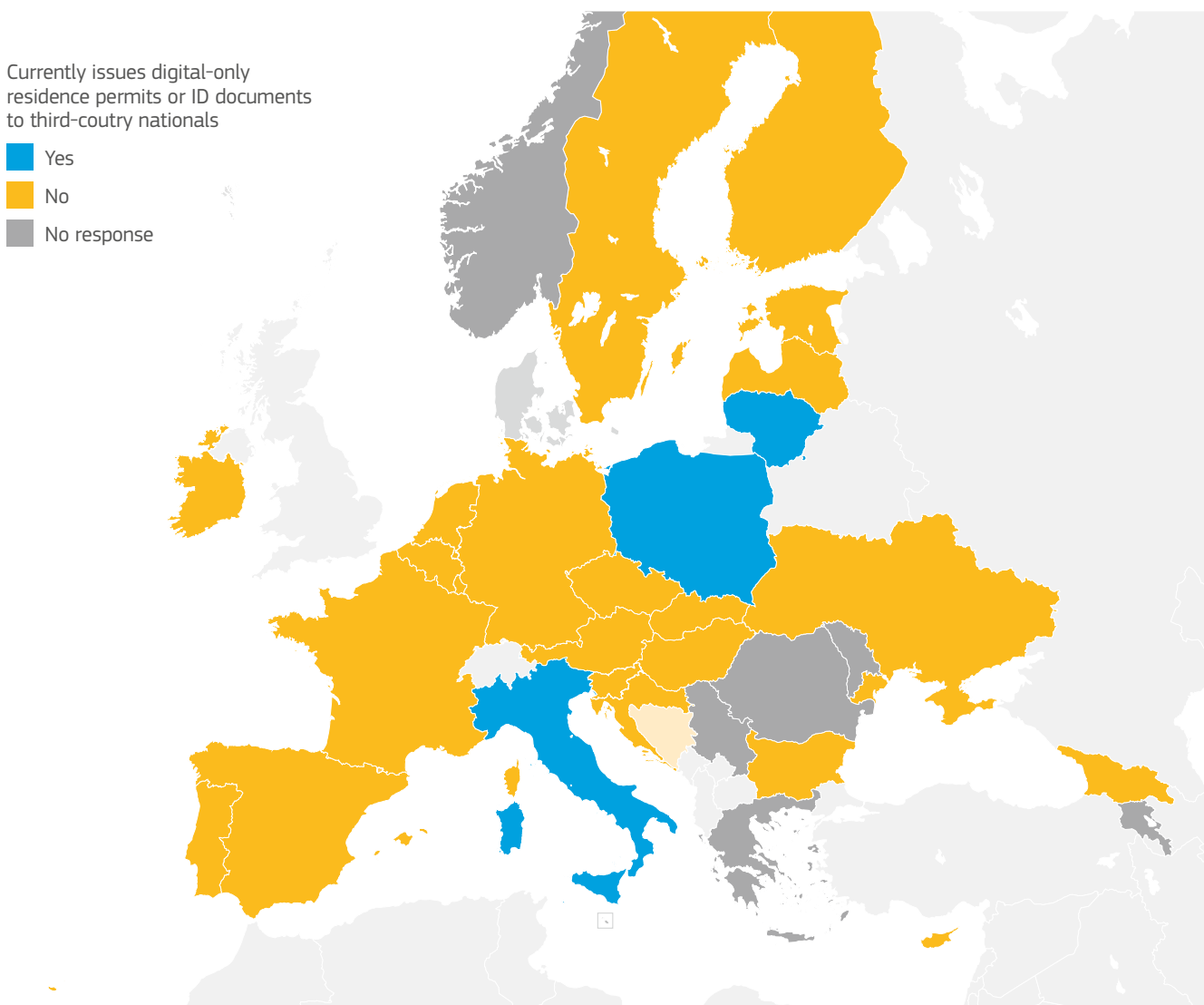
7 Regulation (EU) 2017/1954 of the European Parliament and of the Council of 25 October 2017 amending Council Regulation (EC) No 1030/2002 laying down a uniform format for residence permits for third-country nationals, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.286.01.0009.01.ENG, last accessed on 16 January 2024.

8 Commission Implementing Decision C(2020)2672 of 30 April 2020 introducing a digital seal on the uniform format for visas, https://home-affairs.ec.europa.eu/pages/document/commission-implementing-decision-c-2020-2672_en, last accessed on 16 January 2024.

9 EE, NL, SI and GE.

10 IT, LT, PL.

Figure 1. Use of digital-only documents in EMN Member States and Observer Countries



Source: Data provided by EMN National Contact Points (EMN NCPs), August 2023

Experience of using physical residence permits and Identity documents

EMN Member and Observer Countries have mixed experiences of using physical residence permits and identity documents.

Physical residence permits and identity documents do not appear to pose major issues for most responding EMN Member and Observer Countries.¹¹ They are generally seen as secure and fit for purpose and are the standard by which Member States comply with EU legislation applicable to residence permits and biometric data. France is committed to using physical documents with a combination of physical and electronic security elements, compared to e-documents that have only the latter and are seen as more prone to counterfeiting. Several

EMN Member Countries¹² report low levels of fraud or counterfeiting of physical residence permits or identity documents. Four specified that higher numbers of arrivals and applications did not pose major difficulties for their authorities in dealing with the demand for documents in physical form.¹³

By contrast, many EMN Member and Observer Countries report issues with physical residence permits and identity documents.¹⁴ Chief among these is the capacity and resources needed to prepare and issue physical documents.¹⁵ These generally require in-person appointments with immigration staff – one appointment to collect biometric data and enter/verify personal information, and a second to deliver the document to the individual. Logistical and security concerns apply where EMN Member Countries opt to deliver these documents to a person's

11 FI, FR, HR, HU, LT, LU, LV, SE, SI, SK and GE.

12 HR, HU, LU, NL.

13 HR, LT, LU, SE.

14 BE, CY, CZ, EE, ES, IE, IT, NL, PL, PT and UA.

15 CY, CZ, EE, IE, NL, PL, PT.

address (e.g. documents misappropriated or lost). Several Member Countries report experiencing backlogs, long waiting times and slow, burdensome processes.¹⁶ Capacity constraints are most acute in times of higher influxes in arrivals and applications.¹⁷ Russia's war of aggression against Ukraine created these difficulties for several EMN Member Countries, often because those arriving did not have any travel documents.¹⁸ Anticipating high demand at short notice, Estonia digitalised its procedure to apply for temporary protection, with approximately 41 000 individuals applying for temporary protection by December 2022. At the time, this included 17 000 eligible applicants for extensions over the space of a month. Such situations are difficult to predict and, even when they are anticipated, EMN Member Countries may not always be able to recruit (temporary) staff and/or conclude supply agreements with contractors in time to meet demand.¹⁹

Belgium regularly updates and enhances the safety features of physical documents to maintain the highest level of security. Nevertheless, fraudulent procurement and use of authentic physical documents persist, with identity fraud a prevalent issue during the application and issuance process. In considering the scope for further digitalisation, the Belgian authorities have found that compulsory in-person meetings and checks with the applicant are crucial to maintaining the integrity of the system and safeguarding against potential misuse.

Several EMN Member and Observer Countries believe physical documents to be less secure than electronic documents.²⁰ Updating security features in physical documents is sometimes seen as a long and costly process.²¹ Physical documents can be harder to control than documents verified electronically, requiring officers to be properly trained on the varied and changing standards outside the EU.²² There are also security concerns about misappropriation of stolen, lost or lapsed documents and the personal information they contain.²³

Experience of using digital-only documents

Very few EMN Member and Observer Countries issue digital-only residence permits and identity documents, and evidence on their use is limited.

However, authorities using digital-only documents generally find that they offer key resources and security advantages. In Lithuania and Poland, digital-only documents are reported to be easier, cheaper and faster to create. They require fewer resources to produce and deliver, including avoiding the need to design new physical documents and set up production lines, which 'may take months or even years in some circumstances'.²⁴ This saves authorities from (re)negotiating contracts with suppliers or increasing material production in emergencies. Electronic documents do not require storage and shipping, which saves on costs,

and are seen as more convenient for the holder to store and access.²⁵

Capacity savings from digital-only documents and procedures proved crucial for Lithuania and Poland to deal with the numbers of arrivals and applications resulting from Russia's war of aggression against Ukraine. Lithuania noted that digitalisation avoided the production of more than 42 000 physical documents, not counting renewal procedures, which the country also fully digitalised.

For the Italian authorities, heightened security and verifiability are the main advantages of digital-only documents. They consider digital-only documents harder to falsify and less susceptible to fraud than their physical equivalent. Electronic verification is also viewed as simplifying border checks. The experience of issuing digital-only residence permits since Russia's war of aggression against Ukraine has led national authorities in Italy to favour e-permits and to only issue paper permits to beneficiaries of temporary protection on an exceptional basis.

Ongoing plans for digitalisation of documents and processes

Most EMN Member and Observer Countries are not currently planning to issue digital-only documents to third-country nationals.²⁶

The Netherlands has outlined a potential future vision on the digital extension of residence permits for highly-skilled third-country national workers or students. Ireland has digitalised some immigration processes and documents for third-country nationals (or plans to), notably the introduction of work ePermits.

Ukraine is experimenting with using electronic copies of temporary and permanent residence permits (ePermits). The authorities identified several positive aspects from the pilot:

- ePermits are more secure than physical documents;
- Their use is fast, secure and convenient;
- Authenticity can be checked simply by scanning the QR code;
- They offer individuals access to other (digital) services, such as banking, postal or administrative services.

Two Member States plan to introduce digital-only residence permits or identity documents. In Finland, this is happening under the newly launched pilot project funded by the European Commission to test Digital Travel Credentials (DTC). DTC constitutes a standardised approach for using electronic machine-readable documents (eMRTD), which usually take the form of a readable chip placed on a travel document such as a passport. Three different types are proposed by the International Civil Aviation Organisation (ICAO), with DTC Type 1 and DTC Type 2 requiring a physical eMRTD, while DTC Type 3 would be

16 CZ, IE, NL, PT, SK.
 17 CY, CZ, EE, IE, NL, PL, PT, SK.
 18 CY, CZ, EE, PL, SK.
 19 CZ, PL.
 20 IT, PL and UA.
 21 PL.
 22 IT, PL.
 23 IE, PL.
 24 PL.
 25 LT and GE.
 26 AT, BE, BG, CY, CZ, EE, ES, FR, HR, HU, IE, LU, LV, NL, PT, SE, SI, SK and GE, UA.

fully digital but is only foreseen in exceptional circumstances.²⁷ As part of the EU pilot, Finland is testing defect management and a digitalised EU residence permit, relying on a 2D barcode, or ‘datamatrix’, with biometric data included for digital issuance and a level of security

equivalent to DTC Type 1. Germany is also exploring the redesign of documents issued to third-country nationals. Plans focus on issuing a 2D barcode on all documents, which would make their full digitalisation possible.



4. POTENTIAL FOR USING DIGITAL-ONLY DOCUMENTS

Most EMN Member and Observer Countries do not foresee any problems or security concerns linked to issuing digital-only residence permits and identity documents to third-country nationals.²⁸ However, this may stem from the fact that national authorities in these countries have not evaluated these options and have no official assessments of the feasibility and impacts of their possible adoption. In addition, as EMN Member and Observer Countries were surveyed on the basis of their experience or planning, most responded to questions about potential challenges as ‘not applicable’.

Public acceptance of digital-only documents

A key consideration is that digitalisation requires individuals to have access to an electronic device and to possess the know-how needed to securely use and store digital documents. National authorities were concerned that third-country nationals with insufficient digital skills or financial resources could be left behind, especially if digital-only documents become the standard.²⁹ This includes ensuring that stakeholders who require these documents also have the tools and skills to use and verify digital-only versions (e.g. a potential employer who needs to verify the authenticity of a residence permit; a service provider or law enforcement official needing to check an eID).³⁰ The Polish Ministry of Digital Affairs developed the mWeryfikator functionality to its mObywatel application to allow stakeholders to verify the authenticity of Diia.pl documents.

Having fully digital solutions already, Lithuania and Poland reported facing some challenges in their social acceptance or hesitancy from the public, stakeholders, and national law enforcement authorities. This was not the case in Finland, where plans for digital-only documents have seen no objection.

Operational considerations for issuing digital-only residence permits and identity documents

Documents with a digital component rely on information technology (IT) systems for their registration and authentication. Authorities then rely on these databases to verify the authenticity and validity of a residence permit or identity document presented, for instance as part of border checks. At EU-level, these databases consist of the Visa Information System (VIS)³¹ and Eurodac³² and will also include the Entry/Exit System (EES)³³ once operational. According to two EU Member States,³⁴ the operability and reliability of these IT systems could be an issue, not least because documents such as residence permits grant rights and legal status to individuals. To ensure continuity, fall-back solutions and an integrated process covering applications, renewals and amendments should be prioritised.³⁵ Bulgaria reports being unable to verify digital-only documents at the border in practice, due to a lack of technical and digital means and an inability to enter data in these formats into the national information system. There are concerns about quickly verifying information at the border if the use of digital-only documents were to be extended for travel purposes. Common EU or Schengen-wide security standards might be needed in that eventuality.³⁶

Three EMN Member Countries have strong concerns about the security aspects of digital-only documents, which they consider more susceptible to falsification and counterfeiting than documents with both physical and electronic security components.³⁷ Authorities in Belgium note that, unlike physical documents, digital documents cannot be physically revoked and may remain susceptible to misuse even when invalidated. Digital-only documents also depend on the security features and use of the electronic device(s) on which they are held. One consideration for French authorities is that misappropriation does not only happen physically (e.g. by stealing a smartphone storing such personal documents) but also by accessing data

27 eu-Lisa, *Research Monitoring Report: Enabling Seamless Travel to the European Union*, 2022, pp. 36-37, <https://www.eu-lisa.europa.eu/Publications/Reports/eu-LISA%20-%20Seamless%20Travel%20Report%202022.pdf>, last accessed on 16 January 2024.

28 AT, CY, CZ, ES, FI, HR, HU, IT, LV, NL, PT, SI, SK and GE, UA.

29 BE, CZ, LT, LU, PL.

30 BE, IE, PL.

31 Regulation (EC) No 767/2008 of the European Parliament and of the Council of 9 July 2008 concerning the Visa Information System (VIS) and the exchange of data between Member States on short-stay visas (VIS Regulation), <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32008R0767>, last accessed on 16 January 2024.

32 Regulation (EU) No 603/2013 of the European Parliament and of the Council of 26 June 2013 on the establishment of ‘Eurodac’ for the comparison of fingerprints for the effective application of Regulation (EU) No 604/2013 establishing the criteria and mechanisms for determining the Member State responsible for examining an application for international protection lodged in one of the Member States by a third-country national or a stateless person and on requests for the comparison with Eurodac data by Member States’ law enforcement authorities and EUROPOL for law enforcement purposes, and amending Regulation (EU) No 1077/2011 establishing a European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice (recast), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R0603>, last accessed on 16 January 2024.

33 Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2226>, last accessed on 16 January 2024.

34 EE, PL.

35 EE.

36 PL.

37 BE, CZ, FR.

storage points (e.g. a cloud or database). They are also sceptical about whether e-documents can be used as reliable proof of identity. In response to security concerns about the storage of data pertaining to the national e-Resident digital ID (a physical card enabling e-signature), Estonia has excluded the use of any centralised database in favour of a distributed Data Exchange Layer relying on decentralised databases and natively produced 'KSI' blockchain technology.³⁸

Legal aspects and fundamental rights requirements

Four EU Member States anticipate that legal changes would be necessary at national level were they to adopt digital-only residence permits or identity documents for third-country nationals.³⁹ Estonia and Germany emphasise that introducing digital-only documents should not restrict individuals from using their rights, accessing services and having their legal status recognised. To introduce Diia.pl, Poland had to notify the European Commission, in accordance with Article 39 of the Schengen Borders Code.⁴⁰

Experience from four EU Member States suggests that no additional amendments were necessary to ensure protection of individuals' fundamental rights.⁴¹

EU-wide recognition of digital-only residence permits and identity documents

Nine EU Member States⁴² expect information-sharing and access to nationally held data to be a key issue when trying to verify digital-only documents, notably during border checks. Checking the authenticity of digital-only documents will also become an issue if different templates are used across EU countries. Should an EU-wide initiative be adopted to recognise digital-only residence permits and identity documents, public and private stakeholders will still need separate verifiability tools to be made available for the documents to be used in practice.⁴³

The adoption of an EU-wide instrument to recognise digital-only documents would require at least two EU Member States to review their national legislation.⁴⁴ For some countries,⁴⁵ concerns about security, data protection and interoperability (notably between national and EU databases) also apply to using digital-only documents EU-wide. Having a common approach to digital travel documents should take into account the potential for global

interoperability, for instance by looking at standards established by international organisations such as the ICAO.⁴⁶ The European Commission is currently considering a proposal towards adopting a common format for digital travel documents,⁴⁷ while discussions on digitalising the visa procedure at EU level are ongoing.⁴⁸

Lessons learned from using EU COVID Certificate

EU Member States gained experience in verifying digital-only documents cross-border with the EU COVID Certificate. The key security and authentication features of the certificate relied on a common EU format and the use of QR codes. However, residence permits and identity documents vary significantly from a vaccination passport as they form the basis for an individual's ability to prove their legal status in a given country, make use of their rights, and access key services. Nor did the EU COVID Certificate let people move across borders; rather, it was a temporary measure in addition to standard physical travel documents and did not constitute an identity document.

EU Member States faced interoperability issues with the COVID Certificate, given that it was EU-wide, and there were concerns about the use of EU citizens' personal data where the EU COVID Certificate might be used in third countries.⁴⁹ While it offered a solution for both public (e.g. border management authorities) and private (e.g. business owners) stakeholders, not all EU Member States created their own authentication solutions, leaving service providers to use foreign and potentially less-secure alternatives.⁵⁰ The absence of a common and interoperable unique identifier at EU level was flagged as a limit to secure, uniform and automated authentication.⁵¹

Gaining and maintaining EU citizens' trust could also prove a challenge for national governments, including in light of justified concerns about data privacy and the safety of biometric information.⁵² This creates high requirements for such an initiative to be technically mature, secure, reliable and scalable, including implementing the necessary level of encryption and integrating strong authentication models (e.g. biometric or multifactor). Its use would have to be limited to what is strictly necessary and clearly set in protocols and standard operating procedures (SOPs) for national authorities. Both online and offline verification processes would need to be made available for physical and virtual interactions between the holder and checker.

38 For more information on KSI blockchain, see e-Estonia, *KSI Blockchain*, n.d., <https://e-estonia.com/solutions/cyber-security/ksi-blockchain/>, last accessed on 16 January 2024. E-Estonia is a branch of Enterprise Estonia (*Ettevõtluse Arendamise Sihtasutus*, EAS), a government agency promoting Estonia's economic interests.

39 CY, DE, EE, NL.

40 Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32016R0399>, last accessed on 16 January 2024.

41 FI, LV, PL, PT.

42 HU, IT, LT, LU, LV, NL, PL, PT, SI.

43 DE, NL, PL.

44 CZ, NL.

45 EE, FR, SI.

46 FI.

47 European Commission, *Travel – digitalising travel documents to make travelling easier*, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13514-Travel-digitalising-travel-documents-to-make-travelling-easier_en, last accessed on 16 January 2024.

48 European Commission, Proposal for a Regulation of the European Parliament and of the Council as regards the digitalisation of the visa procedure, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2022:658:FIN>, last accessed on 16 January 2024.

49 FI, LT, LU.

50 EE.

51 BE.

52 IE.



For more information

EMN website: <http://ec.europa.eu/emn>

EMN LinkedIn page: <https://www.linkedin.com/company/european-migration-network>

EMN Twitter account: <https://twitter.com/emnmigration>

EMN YouTube channel: <https://www.youtube.com/@EMNMigration>

EMN National Contact Points

Austria www.emn.at/en/

Belgium www.emnbelgium.be/

Bulgaria www.emn-bg.com/

Croatia emn.gov.hr/

Cyprus www.moi.gov.cy/moi/crmd/emnncpc.nsf/home/home?opendocument

Czechia www.emncz.eu/

Estonia www.emn.ee/

Finland emn.fi/en/

France www.immigration.interieur.gouv.fr/Europe-et-International/Le-reseau-europeen-des-migrations-REM3/Le-reseau-europeen-des-migrations-REM2

Germany www.bamf.de/EN/Themen/EMN/emn-node.html

Greece emn.immigration.gov.gr/en/

Hungary www.emnhungary.hu/en

Ireland www.emn.ie/

Italy www.emnitalyncp.it/

Latvia www.emn.lv

Lithuania www.emn.lt/

Luxembourg emnluxembourg.uni.lu/

Malta emn.gov.mt/

The Netherlands www.emnnetherlands.nl/

Poland www.gov.pl/web/european-migration-network

Portugal rem.sef.pt/en/

Romania www.mai.gov.ro/

Spain www.emnspain.gob.es/en/home

Slovak Republic www.emn.sk/en

Slovenia www.gov.si/

Sweden www.emnsweden.se/

Norway www.udi.no/en/statistics-and-analysis/european-migration-network---norway#

Georgia migration.commission.ge/

Republic of Moldova bma.gov.md/en

Ukraine dmsu.gov.ua/en-home.html

Montenegro www.gov.me/mup

Armenia migration.am/?lang=en

Serbia kirs.gov.rs/eng