



March ____ 2022

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LEGAL FRAMEWORK

Envisioned as 'forms of control', borders are a combination of the physical, the digital, the human and the legal working in a complex tandem toward the aim of regulating mobility between countries. In the EU, twenty two out of twenty-eight countries follow the Schengen border code which abolished internal border controls and works through the cooperation of member states.

Since our first [report](#), a drastic digital transformation has occurred at the borders, particularly regarding the collection of biometric data, the increased use of Closed-circuit television (CCTV) and the consideration of new, largely unregulated technologies such as the deployment of drone technologies in border surveillance. The trend in border management has leaned heavily toward a security related focus with most of the changes and introductions being geared toward 'crimmigration' control, increased surveillance creep and social sorting measures, all of which are backed by technological systems targeting policing and mobility control. The increased deployment of technologies is also proving to be a regulatory and technological challenge as the potential for data discrimination is not only high but has been proven to be a barrier to equal access and protection particularly for vulnerable travelers such as asylum seekers.

LEGAL FRAMEWORK

A confluence of legal agreements has guided the development of the EU border framework towards what it is now. These include the Single European Act of 1986, which was a revision of the Roman treaties which established the European communities and European political cooperation. The SEA Act, a partial response to a report by British commissioner Arthur Cockfield, was an attempt at creating a common market, the key to which was setting out physical border controls. Following the SEA Act, several other legal policies were enacted to ease border flows. This includes the introduction of a common visa policy in 1990, a common extradition policy in 1991, and the Treaty of Amsterdam.

Ultimately, the regulations harmonised the handling of migration and border controls throughout Europe. The initial problem with borders, the allowance of free movement to facilitate better market conditions, having been met, regulators turned their eye to migration, refugees, and asylum seekers. The Lisbon Treaty of 2007, the Amended Treaty on the European Union, and the Treaty of the Functioning of the European Union were all involved in detailing border checks, asylum and migration¹. Thus far, this legal framework is seeing expansion in the Schengen agreements. Made up of The Schengen Agreement² and the Convention Implementing the Schengen Agreement.³ The agreements govern the general border control systems in the Schengen area, made up of 22 of the

¹ TFEU Art 77-88

² Also referred to as Schengen I

³ Also referred to as Schengen II

28 EU member states. The current framework, the Smart Borders Package arose from a proposal by the European Commission in 2013 as part of the effort to ensure an effective response to terrorism and security threats in the EU for the years 2015-2020. Regulation (EU) 2017/226 established the Entry/Exit System (EES), Regulation (EU) 2018/1241 of the European Parliament and of the Council of 12 September 2018, amended Regulation (EU) 2016/794 for the purpose of establishing a European Travel Information and Authorisation System (ETIAS).

The European Data Protection Supervisor is responsible, under EU law (Regulation (EU) 2018/1725) to ensure protection of the fundamental rights of individuals in cases where EU bodies process personal data, including the different systems that make up the Smart Borders framework. The European Agency for the Operational Management of Large Scale IT Systems (eu-LISA) was created in 2017 and is responsible for "the operational management of large scale IT systems, which are essential instruments in the implementation of the asylum, border management and migration policies of the EU" (eu-LISA, 2017).



EU SMART BORDERS
PROPOSAL

EU SMART BORDERS PROPOSAL

The Entry/Exit System (EES) regulation

The Entry/Exit system is a database which records entries and exits of third-country nationals. The system is relied on by border authorities, immigration authorities, Visa authorities, and other designated authorities such as law enforcement officers. It is intended to be interoperable with several similar databases in border security including SIS II⁴, VIS, Eurodac, ECRIS-TCN (The European Criminal Records Information System) and ETIAS for the purpose of cross-checking mobility permissions at border checkpoints. The system was to enter into operation in 2015 however it is currently scheduled to enter into operation in the first quarter of 2022. Currently the system falls under EU regulation 2017/2226 and its technical structure is integrated with VIS and the European Travel Information and Authorization System (ETIAS). The EES was intended to change the Schengen borders code in several ways including:

- Automating border controls
- Creating a central register of cross border movements
- Effective management of authorised short stays
- Assisting in the identification of third country nationals
- Allowing for the detection and identification of overstayers
-

Largely, the introduction of the EES has been a securitization measure. The adoption of the EES has led to the amendment of regulations to widen the scope of collection of data for security purposes. The Schengen Border Code amendments were aimed at introducing new technological components, the e-gates and self-service systems for the pre-enrollment of data and to allow for checks against law enforcement databases on all persons. Further amendments were made to recontextualize SIS II and improve the use of biometric data for law enforcement purposes and the extension of the European Criminal Records Information System (ECRIS-TNC) to include TCN's.

The EES also consists of a central register to monitor cross border movements and is intended to act to combat largely criminal activities. The register applies to non-EU nationals, both visa-required and visa exempt travellers in the Schengen area. The register collects and stores personal data such as: names, passport numbers, fingerprints, and photos. The register also notes data from the places of entry and exit. The register will be made accessible to all visa-granting authorities, immigration authorities, border authorities as well as Europol. Ideally, if a traveller who falls in the risk categories crosses a border, a border guard will verify their data against security databases such as SIS, and Interpol SLTD. Risk categories are determined on the basis of permissibility to cross the border and potential violations for instance persons who are found to have overstayed their

⁴ The operation and use of SIS is governed by Regulation (EU) 2018/1862 which establishes the ambit of sis in police and judicial cooperation.

visas are placed as a high risk category. Various interoperability components are to be added to the system by the end of 2023 including a European search portal, a shared biometric matching service, a common identity repository, and a multiple identity detector, which would act as an automatic alert system to detect multiple or fraudulent identities.

The central register relies primarily on interoperability, which is addressed as part of the smart borders package in two regulations adopted by the European council in 2019, which proposed frameworks for interoperability between EU information systems in the field of Borders and visa and between Eu Information systems in the field of police and judicial cooperation, asylum, and migration.⁵

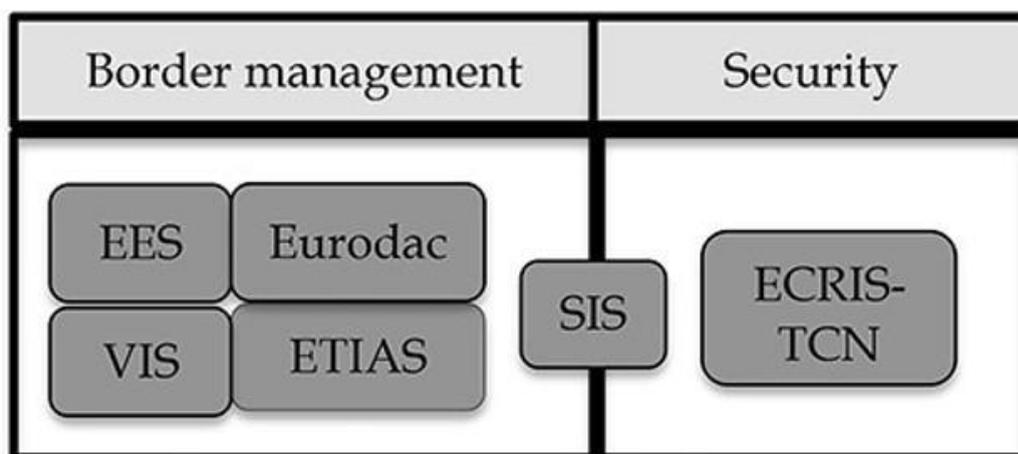


Figure 1; The six interoperable EU information systems. (Casagran, 2021)

ABC systems

Automated border control systems rely on self-service devices and systems which take over the role of border control officers. The system checks electronic passports at e-gates, compares biometrics stored on the passport to the person, and determines whether they may pass. The process runs under supervision of border guards who perform checks on travellers flagged by the system and allows them to manage unusual cases while authorised travellers pass through.

⁵ Regulation (EU) 2019/817
Regulation (EU) 2019/818



FORMING, PERFORMING AND
MOVING ACROSS DIGITAL
BORDERS

FORMING, PERFORMING AND MOVING ACROSS DIGITAL BORDERS

1. Migration

Migration has become a key concern for EU countries with various digital responses being deployed in an effort to address concerns on the effectiveness of border control. The number of forcibly displaced persons has increased dramatically in the past decade, with the number of refugees doubling from 10 to 20.4 million between 2010 and 2019 globally. In 2016, several Schengen members began tightening border control measures as a response to perceptions of threats by an increased influx of immigrants. In response, border control measures have been ramped up with various surveillance technologies, such as the development of databases that use biometric data to control mobility in the EU such as EURODAC and SIS. Regulation (EU) 656/2014 defines the rules for border surveillance as follows: "It establishes greater legal certainty in the context of operations on external sea borders, and the provisions and rules concerning interception, rescue at sea and disembarkation. It emphasises safety at sea, the protection of fundamental rights and the principle of non-refoulement. It distinguishes between the different rules and procedures concerning interception on the high seas, in territorial waters and in contiguous zones." While the regulation seems to provide a rational basis for the expansion of surveillance, there are several stringent control measures which have been perceived as 'violent' in that they enable systematic forms of violence toward migrants and display a disregard for human dignity and equality at borders (Jones, 2016). Ioana Vrăbiescu refers to this as 'crimmigration' referring to the prioritisation of deporting criminalised migrants across internal EU borders (Vrăbiescu, 2020). Data extraction in the face of immigration has also become a question of the non-neutrality of data which contributes to 'anti-immigrant' control (de Haas, Castles, and Miller 2020).

The technological securitization of borders has been developed with preconceived notions that link migration to criminality that match those predominant in society (Metcalf and Dencik 2019). For that reason, the management of borders is not merely an administrative act aimed at sorting, but, in many ways, it is also a political statement, a representation of the 'empowerment-control' nexus in border control and management (Nedelcu & Soysüren, 2020). Regulation (EU) 2019/1896 required more border agents committed to the protection of human rights before the end of 2020 - a requirement that has yet to be met. "This Regulation addresses migratory challenges and potential future challenges and threats at the external borders. It ensures a high level of internal security within the Union in full respect of fundamental rights, while safeguarding the free movement of persons within the Union. It contributes to the detection, prevention and combating of cross-border crime at the external borders" (Regulation (EU) 2019/1896).

2. Solving problems with data, the technological fix

The introduction of technology into border control has long been touted as an efficiency/control exercise. These technological fixes are primarily and heavily focused on third country nationals with legislation emphasising the need to control migration. Introducing 'smart borders' with an emphasis on collecting biometric data and using it to determine mobility has been the focus of the current developments relating to border management. Currently, the EU relies on several interoperable systems to manage its border:

- The Visa Information System (VIS), which is used to determine and coordinate visa applications and which Schengen member states can use to exchange data on visa applications for several purposes including law enforcement.
- Eurodac, a system managing the administration of asylum. The system acts as a repository, storing the fingerprints of different categories of travellers with Category 1 being asylum seekers, category 2 being individuals associated with irregular border crossings and TCN's or stateless persons who are found irregularly staying in a member state.
- SIS I and SIS II, which are used to manage information sharing on alerts for specific travellers for security purposes. In addition, they process alerts on TCN's subject to a return decision.
- ETIAS, which is a pre-travel assessment of whether a visa exempt TCN has raised any security concerns or public concerns due to their movement across the border.
- ECRIS-TCN, which is a database that relies on biometric and facial recognition data to share information on previous convictions of TCN's and stateless persons. It's an addition to ECRIS, a decentralised electronic system that facilitates the exchanging of criminal record information between relevant authorities, giving them access to information such as criminal history regardless of the country of conviction.
- Finally, EIS, which is a database used to store and query data on international crime and terrorism alerts linked to fingerprints, DNA profiles and facial recognition data.

Each system is used in tandem with the others to determine the mobility permissions or restrictions of the travellers.

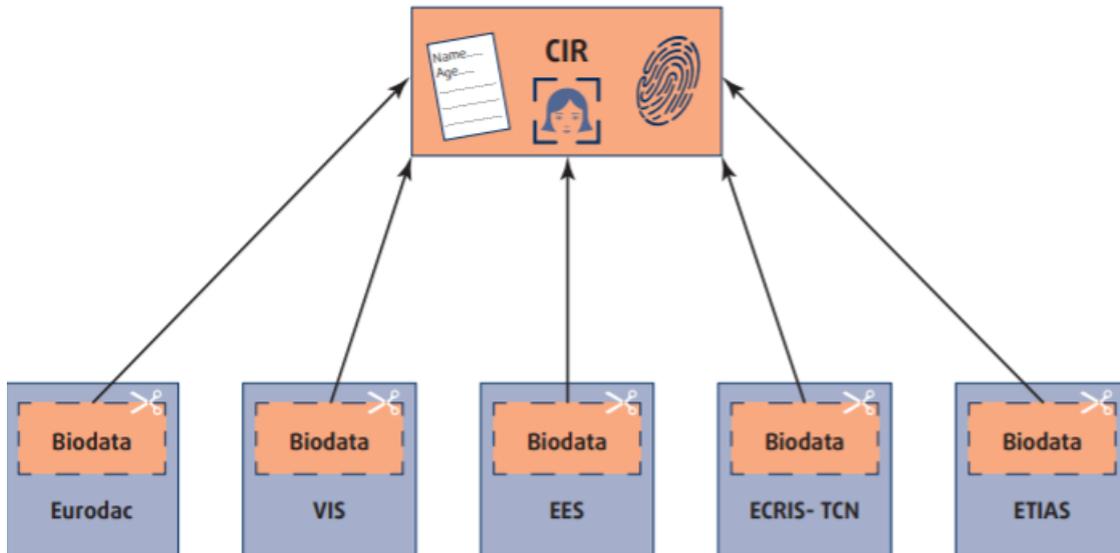


Figure 2: The Common Identity Repository (FRA, 2020)

3. Social sorting at the border

Social sorting refers to the unequal treatment of different groups of people which produces unfavourable outcomes for those who are ultimately disenfranchised by being placed at the bottom of the sorting. The nature of the current border system is first, a large-scale sorting exercise among irregular migrants, asylum seekers and suspected categories from all other travellers using SIS I and II and Eurodac. Secondly, the ABC sorts registered travellers and EU citizens (who get automated passage) from non-registered travellers. At the third stage, visa-exempt travellers and visa travellers are separated with the visa travellers enrolled in the VIS. Visa travellers are sorted according to whether they have a former visa rejection or overstay record from those who do not. At the fifth and final level visa travellers with valid visas versus visa travellers who have overstayed their visas are differentiated.

Social exclusion is multifaceted and, oftentimes, the framing of narratives concerning different States and regions drives an unconscious bias that sees social sorting succeed in creating further prejudice to persons based on geographical origin which in many instances has racial connotations (Topak, 2014).

4. Bodies and biometrics

The abstraction of human bodies as data points forms a primary concern of any initiative which deploys technology to serve a human centred, human focused purpose. These can be referred to as systems creating 'data migrants' (Ross 2007), that profile persons to create digital identities who are then shuffled around, mixed with the data of others to make generalised decisions and, in some cases, don't account for the effects of uncontrollable, social, economic and

political factors. This development of digital borders, presided over by a growing understanding of 'digital sovereignty', means that most people are subject to processes and machinery that demand of them, their personal, sensitive data, particularly with more vulnerable groups such as asylum seekers. This system will see a digital sorting process in tandem with a physical sorting process whereby personal data is passed through several technological checkpoints, many of which will contribute to the decision of whether to limit their mobility. Ultimately, this creates a system which reduces lived experience to a series of data points; transforming previously defined physical orders to a dispersed border which swaddles the physical self where people are then bound to their own 'data trace' that determines their mobility (Metcalf & Dencik, 2019).

5. Asylum seekers

In September 2020, the EU presented its "New pact on Migration and Asylum", a migration management strategy intended to provide a greater and more comprehensive strategy for controlling migration. This has a varying impact on the digital strategy for managing asylum seekers including extending the scope of the Eurodac regulation to allow wider uses of the data like monitoring the secondary movements of irregular migrants who have not sought asylum. The pact seems to be a step in the direction of mass deportation and its effects are already being felt as countries take advantage of stricter immigration policies to introduce procedures which are not cognizant of the rights of asylum seekers. Article 31 §1 of the Geneva Convention of 1951 prohibits the punishment of asylum seekers who have crossed borders illegally, provided that they arrive directly from countries where their lives were in danger and/or have valid reasons for violating the rights of entry. Despite this affirmation of the rights of Asylum seekers, concerns over digital privacy violations have abounded leading to legal action in the case of a lawsuit filed by a German NGO, Society for Civil Rights (GFF) against the German Government for a violation of an asylum-seeker's rights when it was stipulated that as part of the process of applying for asylum, the contents of their mobile phone would be required (Kaurin, 2019).

Asylum seekers have to submit several categories of personal data in order to have their applications processed. Their fingerprints are collected for use in Eurodac which collects and compares fingerprints of asylum seekers and irregular immigrants. The fingerprint data is transferred by national authorities to a central unit which is maintained by the European Commission. The data is compared to determine which EU member state should take responsibility for processing the asylum application. Initially the database was created to prevent 'asylum shopping' and maintain a central registry, but it has been expanded since 2015 to include efforts to increase securitization (Metcalf & Dencik, 2019).

6. Irregular migrants

A combination of digital and regulatory measures have been introduced since 2015 in the area of illegal migration. The efficacy of these measures is in question as it has increased market opportunity for human traffickers and increased irregular migration through more perilous means (FRONTEX 2016). Additionally, the measures have also resulted in an increased the number of migrants detained for travelling undocumented and various human rights concerns have been posed about the ethics and legality of the stay of illegal immigrants in these detention centers.

Further, an increase in funding for border guards and greater surveillance technology has seen heightened numbers of illegal immigrants being turned around and detained in their country of origin (Habib, 2021). The deployment of surveillance technology like long range cameras and night vision equipment, as well as prospective technology like AI powered lie detectors and virtual border guards, have been piloted to add onto the existing surveillance measures (Aljazeera, 2021). These measures are concerning and harmful; particularly the recently piloted 'sound cannon' which is a long range acoustic device that fires bursts of noise at the border frontier in Greece (Nair, 2021). The largely unchecked use and collection of data has been of concern to data justice advocates as the European Border Surveillance Systems obtains personal data from refugees without their informed consent and without consideration of how coercive measures would lead illegal immigrants to acquiesce in having their data collected.

7. Fundamental rights

Article 3 of the Treaty on European Union (TEU) states that "The Union shall offer its citizens an area of freedom, security and justice without internal frontiers, in which the free movement of persons is ensured in conjunction with appropriate measures with respect to external border controls, asylum, immigration and the prevention and combating of crime." Specific aspects of Smart Borders raise questions with regard to the EU Charter of Fundamental Rights, including Article 1 (dignity), Article 7 (respect for private and family life), Article 8 (right to protection of personal data), and Article 21 (non-discrimination). The increased use of surveillance technologies such as drones and motion detector sensors combined with larger databases that require more and more data from travellers are raising concerns about the impacts of datafication of persons and the subsequent threats to their rights.

8. Privacy

Enforcing privacy rights at borders is fast becoming a controversial subject, the delicate balance between protecting data rights and relying on extensive data collection and use practices to optimise border management tilts heavily toward the latter causing several privacy violation concerns for travellers at border

checkpoints. This has far reaching implications particularly for more vulnerable groups such as asylum seekers. There is an overarching need for data protection impact assessments to determine the dangers that vulnerable groups are in and whether the ambit of data collection practices falls within the purpose limitation principle, which requires that personal data be collected only for specific, explicitly defined purposes (European Union Agency for Fundamental Rights and Council of Europe, 2020). The application of this principle in border management has been contested with human rights organisations raising concerns about excessive data collection, for instance where the biometric data of children is collected in situations where child protection is not the purpose⁶.

9. Dignity

Beyond the legal issues of privacy and protection, various key documents follow a dominant narrative of control of migrant mobility, limiting their freedoms without accounting for the responsibility that states owe to migrants. The idea of dignity connotes a respect of the physical and mental integrity of a person and in migration, is determined by the opportunities for the individual to develop themselves fully or to exercise their freedoms without fear for their life (Cornelisse, 2019). The legal acknowledgement of this right and states' responsibilities to promote the dignity of migrants has been scarce, with legislation largely noting that respect and dignity applies in a general context but with no specific provisions on its applications to migrants and the dignity that is owed to them by nation states (OHCHR, 2017). For instance, the EU Charter on Fundamental Rights includes several provisions on human dignity but fails to mention a connection between human dignity and migration. In 2018, two global compacts were adopted by the United Nations to address growing interest in and concern about the migratory crisis emphasising that states have shared responsibilities over the treatment of migrants and should endeavour to protect and fulfil the human rights of migrants including ensuring that there are technological safeguards for migrants such as reporting mechanisms to allow them to report acts of racism, xenophobia, incitement to hatred, excessive use of force and dangerous border control practices (OHCHR, 2017).

10. Freedom of movement

There are very marked differences between how EU member states currently treat migrants from outside Europe and 'mobile EU citizens' from within Europe, in terms of regulating their admission and rights after entry. In all countries, immigration is restricted through an often-complex range of national admission policies that regulate the scale and selection of migrants. National immigration policies typically distinguish between high-skilled migrants (who face fewer restrictions on admission) and lower-skilled migrants (who face relatively more

⁶ In an open letter on fundamental rights concerns about the EURODAC reform, various organizations posed concerns about the increased surveillance and data collection aspects of EURODAC including the failure to conduct an impact assessment to determine the child rights implications on the changes proposed, the processing of facial images and the privacy invasive measures and the coercive measures taken to ensure data collection to aid the system in its functionality <https://www.statewatch.org/media/2714/eu-eurodac-open-letter-rights-8-9-21.pdf>.

restrictions), and they enforce different rules for admitting family migrants, students, asylum seekers, and refugees. Through extensive data collection exercises which directly impact mobility there is a move toward the 'remote control' of persons within and at EU borders (Zolberg, 2006). While free movement is guided differently by different organisations, a majority of immigration policies focus on migrants from outside the EU. The shift in terminology from 'mobile EU citizens' to 'migrants' underlies the 'othering' that takes place in determining social sorting and discriminatory handling of different groups of people on the basis of country of origin, class and ethnicity.

11. Non-discrimination

By nature, borders are points of exclusion. While the intention to allow some people through while keep others out should be a process of rational sorting methodology, oftentimes they reflect an irrational, discriminatory history which can have an unfair, multifaceted effect on nationals who are discriminated against on the basis of geographical origin and national and international factors that are not under their control. Firstly, through the elaborate visa regimes which are used by Global North countries in a way that greatly hinders the mobility of travellers from the Global South and creates a high bar for entry and exit of different nationals which, along lines of inclusion and exclusion has been heavily racialized (Achiume, 2021). Secondly, through the dominance of data-seeking technologies which have little regard to informed consent and understanding particularly for vulnerable travellers and lastly, through the opacity of these technologies which are largely unquestioned and which act as judge, jury and executioner for vulnerable travellers. The function of borders is a balance of inflow and outflow management, with the addition of technology, that management must be placed in the context of data rights, the privacy and dignity of all persons and the special needs of vulnerable travellers such as migrants and asylum seekers. A failure to include them a life threatening miscarriage of justice and should be treated with the highest level of care of the travellers.

REFERENCES

- Achiume, E. T. (2021). Digital Racial Borders. *American Journal of International Law*, 115, 333–338. <https://doi.org/10.1017/aju.2021.52>
- Aljazeera. (2021, May 31). *Migrants, refugees will face digital fortress in post-pandemic EU*. [Www.aljazeera.com](http://www.aljazeera.com).
<https://www.aljazeera.com/news/2021/5/31/migrants-refugees-will-face-digital-fortress-in-post-pandemic-eu>
- Bellanova, R., & Glouftsiou, G. (2020). Controlling the Schengen Information System (SIS II): The Infrastructural Politics of Fragility and Maintenance. *Geopolitics*, 27(1), 160–184. <https://doi.org/10.1080/14650045.2020.1830765>
- Bloj, R., & Buzmaniuk, S. (2020, November 16). *Understanding the new pact on migration and asylum*. [Www.robert-schuman.eu](http://www.robert-schuman.eu).
<https://www.robert-schuman.eu/en/european-issues/0577-understanding-the-new-pact-on-migration-and-asylum>
- Brownsword, R. (2021). Migrants, State Responsibilities, and Human Dignity. *Ratio Juris*, 34(1), 6–28. <https://doi.org/10.1111/raju.12303>
- Casagran, C. B. (2021). Fundamental Rights Implications of Interconnecting Migration and Policing Databases in the EU. *Human Rights Law Review*, 21(2). <https://doi.org/10.1093/hrlr/ngaa057>
- Christou, G. (2010). The European Union, borders and conflict transformation: The Case of Cyprus. *Cooperation and Conflict*, 45(1), 55–79.
<https://doi.org/10.1177/0010836709347213>

- Cornelisse, G. (2019, June 28). *Protecting Human Dignity Across and Within Borders: The Legal Regulation of International Migration in Europe*. Papers.ssrn.com.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3411482
- Csernaton, R. (2018). Constructing the EU's high-tech borders: FRONTEX and dual-use drones for border management. *European Security*, 27(2), 175–200.
<https://doi.org/10.1080/09662839.2018.1481396>
- Cymbranowicz, K. (2020). The development of the European Union in the areas of migration, visa and asylum after 2015. Priorities, effects, perspectives. *Studia Migracyjne - Przegląd Polonijny*, 46(1 (175)).
<http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-bf3b898e-789a-4cae-9e1c-d6553d0aa497>
- Digital Freedom Fund. (2021, June 18). *The Ongoing Digitisation of Europe's Borders*. Digital Freedom Fund.
<https://digitalfreedomfund.org/the-ongoing-digitisation-of-europes-borders/>
- eu-LISA. (2020). *European Entry-Exit System*.
https://pages.nist.gov/ifpc/2020/presentations/12_European%20Entry%20Exit%20system%20-%20IFPC%202020%20v1.0.pdf
- European Commission. (n.d.). *Press corner*. European Commission - European Commission. Retrieved February 24, 2022, from
https://ec.europa.eu/commission/presscorner/detail/en/ip_21_503
- European Union Agency for Fundamental Rights and Council of Europe. (2020). *Handbook on European law relating to asylum, borders and immigration Edition 2020*.
https://www.echr.coe.int/documents/handbook_asylum_eng.pdf

- Glouftsiou, G., & Scheel, S. (2020). An inquiry into the digitisation of border and migration management: performativity, contestation and heterogeneous engineering. *Third World Quarterly*, 42(1), 123–140.
<https://doi.org/10.1080/01436597.2020.1807929>
- Gülzau, F., Mau, S., & Korte, K. (2021). Borders as Places of Control. Fixing, Shifting and Reinventing State Borders. An Introduction. *Historical Social Research / Historische Sozialforschung*, 46(3), 7–22.
<https://www.jstor.org/stable/27075115>
- Hanke, P., & Vitiello, D. (2019). High-Tech Migration Control in the EU and Beyond: The Legal Challenges of “Enhanced Interoperability.” *Use and Misuse of New Technologies*, 3–35. https://doi.org/10.1007/978-3-030-05648-3_1
- Jeandesboz, J. (2016). Smartening border security in the European Union: An associational inquiry. *Security Dialogue*, 47(4), 292–309.
<https://doi.org/10.1177/0967010616650226>
- Kaurin, D. (2019, May 15). *Data Protection and Digital Agency for Refugees*. Centre for International Governance Innovation.
<https://www.cigionline.org/publications/data-protection-and-digital-agency-refugees/>
- Leese, M., Noori, S., & Scheel, S. (2021). Data Matters: The Politics and Practices of Digital Border and Migration Management. *Geopolitics*, 27(1), 1–21.
<https://doi.org/10.1080/14650045.2021.1940538>
- Lehtonen, P. (2020). *The Technologization of European Union Border Control Political Agency Steering Societally Significant Practices*.
<https://trepo.tuni.fi/bitstream/handle/10024/122458/978-952-03-1591-7.pdf?sequence=2&isAllowed=y>

- Lehtonen, P., & Aalto, P. (2017). Smart and secure borders through automated border control systems in the EU? The views of political stakeholders in the Member States. *European Security*, 26(2), 207–225.
<https://doi.org/10.1080/09662839.2016.1276057>
- Metcalfe, P. (2021). Autonomy of Migration and the Radical Imagination: Exploring Alternative Imaginaries within a Biometric Border. *Geopolitics*, 27(1), 47–69.
<https://doi.org/10.1080/14650045.2021.1917550>
- Metcalfe, P., & Dencik, L. (2019). The politics of big borders: Data (in)justice and the governance of refugees. *First Monday*.
<https://doi.org/10.5210/fm.v24i4.9934>
- Moffette, D., & Walters, W. (2018). Flickering Presence: Theorizing Race and Racism in the Governmentality of Borders and Migration. *Studies in Social Justice*, 12(1), 92–110. <https://doi.org/10.26522/ssj.v12i1.1630>
- Nair, N. (2021, June 21). *E.U. Spends Billions On Digital Fortress To Keep Out Migrants*. The Organization for World Peace.
<https://theowp.org/e-u-spends-billions-on-digital-fortress-to-keep-out-migrants/>
- Nedelcu, M., & Soysüren, I. (2020). Precarious migrants, migration regimes and digital technologies: the empowerment-control nexus. *Journal of Ethnic and Migration Studies*, 1–17. <https://doi.org/10.1080/1369183x.2020.1796263>
- Noori, S. (2021). Suspicious Infrastructures: Automating Border Control and the Multiplication of Mistrust through Biometric E-Gates. *Geopolitics*, 1–23.
<https://doi.org/10.1080/14650045.2021.1952183>

Schimmelfennig, F. (2021). Rebordering Europe: external boundaries and integration in the European Union. *Journal of European Public Policy*, 28(3), 311–330. <https://doi.org/10.1080/13501763.2021.1881589>

The EU, the Externalisation of Migration Control, and ID Systems: Here's What's Happening and What Needs to Change. (2021, October 15). Privacy International.
<https://privacyinternational.org/long-read/4651/eu-externalisation-migration-control-and-id-systems-heres-whats-happening-and-what>

The New Pact on Migration and Asylum: One year on, a fair and humane asylum system is needed more than ever | The IRC in the EU. (2021, September 23). Eu.rescue.org.
<https://eu.rescue.org/article/new-pact-migration-and-asylum-one-year-fair-and-humane-asylum-system-needed-more-ever>

The role of security and defence companies in EU migration and border control and the impact on the protection of the rights of refugees, migrants and asylum seekers 1. (n.d.).
<https://www.ohchr.org/Documents/Issues/Mercenaries/WG/ImmigrationAndBorder/kumar-submission.pdf>

Trauttmansdorff, P., & Felt, U. (2021). Between Infrastructural Experimentation and Collective Imagination: The Digital Transformation of the EU Border Regime. *Science, Technology, & Human Values*, 016224392110575. <https://doi.org/10.1177/01622439211057523>

UN Office of the High Commissioner for Human Rights (OHCHR).
In Search of Dignity. Report on the human rights of migrants at Europe's borders, 2017, available at: <https://www.refworld.org/docid/5a097c284.html>

Witteborn, S. (2021). Digital placemaking and the datafication of forced migrants.

Convergence: The International Journal of Research into New Media

Technologies, 27(3), 637–648. <https://doi.org/10.1177/13548565211003876>

Zolberg, A. R. (2006). Managing a World on the Move. *Population and*

Development Review, 32, 222–253. <https://www.jstor.org/stable/20058950>

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