ADAM MICKIEWICZ UNIVERSITY, Poznan

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The development of Migration Management Technologies under EU-private Partnerships:

are migrants' fundamental rights forgotten on behalf of innovation?

Author: Marta Caixas Inácio
Supervisor: Łukasz Szoszkiewicz
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Writing a thesis is a shared process. Initially, I looked at it from a very individual perspective, and I believe I didn't understand it fully. Today, after these 5 months, it looks pretty different. Everything has an impact, and we do not even realize it. It ends up being a compilation of perspectives, tons of readings, discussions, dedication, and an extension of ourselves. The optimism or not, it's ours. The writing too. We can only understand it after we write it. Until then, it's only an idea.

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ABSTRACT

This paper critically examines the impact of migration management technologies on migrants' fundamental rights in the EU. As migrants are increasingly portrayed as security concerns, the adoption of cutting-edge technologies by EU Member States and institutions has grown. However, developing and deploying these technologies often neglect migrants' fundamental rights.

The thesis is structured in the following way. Firstly, its analysed four key technology types: automated biometric systems, automated risk assessment, emotion recognition AI, and predictive analytics. It investigates their practical application as migration management tools and uncovers potential violations of fundamental rights. Secondly, it explores the legislative ecosystem in the EU, which promotes hostile migration policies in contrast with promising ongoing discussions on AI and business regulations. Thirdly, its examined EU-funded migration-related projects under Horizon Europe and its predecessors, highlighting the complex interplay between private entities, EU institutions, and agencies in technology development and deployment.

Based on the findings, three recommendations (*lex ferenda)* are proposed. First, it calls for mandatory fundamental rights impact assessments before and after the development and deployment of migration management technologies. Second, it advocates for stronger transparency regulations covering lobbying activities, including EU agencies, to enhance accountability. Third, it emphasizes the need for a holistic approach to technology development that safeguards migrants' fundamental rights.

This study underscores the significance of prioritizing fundamental rights and demonstrating solidarity in EU migration management while utilizing technology to foster a more equitable world.

Keywords: Migration, EU, technology, Migration Management Technologies, Border Control, Fundamental Rights, Lobbying, Research and Innovation, Funds, Security

'We are Black and border guards hate us. Their computers hate us too'[1]

– Adissu, a young man from Eritrea living in Brussels without immigration status, was interviewed in July 2020.

This thesis is dedicated to all people on the move that experienced how technology should not be used. May there be a positive end to how migration management technologies are applied, with human righanalyzeds core and to promote international responsibility and solidarity.

[1] Petra Molnar, 'Territorial and Digital Borders and Migrant Vulnerability Under a Pandemic Crisis' in Anna Triandafyllidou (ed), *Migration and Pandemics* (Springer International Publishing 2022).

TABLE OF ABBREVIATIONS

ABC	Automated Border Control
AI	Artificial Intelligence
CJEU	Court of Justice of the European Union
EASO	European Asylum Support Office
ECRIS-TCN	European Criminal Record Information System for third-country nationals
EES	Entry/Exit System
EIBM	European Integrated Border Management
ETIAS	European Travel Information Authorisation System
EU	European Union
EUAA	European Union Agency for Asylum
eu-LISA	European Union Agency for the Operational Management of Large-Scale IT Systems
Eurodac	European dactyloscopy database
Europol	European Union Agency for Law Enforcement Cooperation
EUROSUR	European Border Surveillance System
FP7	Framework Programme 7
FRA	European Union for Fundamental Rights
FRONTEX	European Border and Coast Guard Agency
GDPR	General Data Protection Regulation
IOM	International Organization for Migration
IT system	Information technology system
NGO	Non-governmental organization
PPPs	Public-Private partnerships
PMSCs	Private Military and Security Companies
SIS	Schengen Information System
TCNs	Third Country Nationals
TFEU	Treaty on the Functioning of the EU
The Charter	EU Charter of Fundamental Rights
The Commission	European Commission
The Council	Council of the European Union
VIS	Visa Information System

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INTRODUCTION

The Consortium of Roborder stated on the objectives of the project:

> ROBORDER aims at developing and demonstrating a fully-functional autonomous border surveillance system with unmanned mobile robots including aerial, water surface, underwater and ground vehicles which will incorporate multimodal sensors as part of an interoperable network.[2]

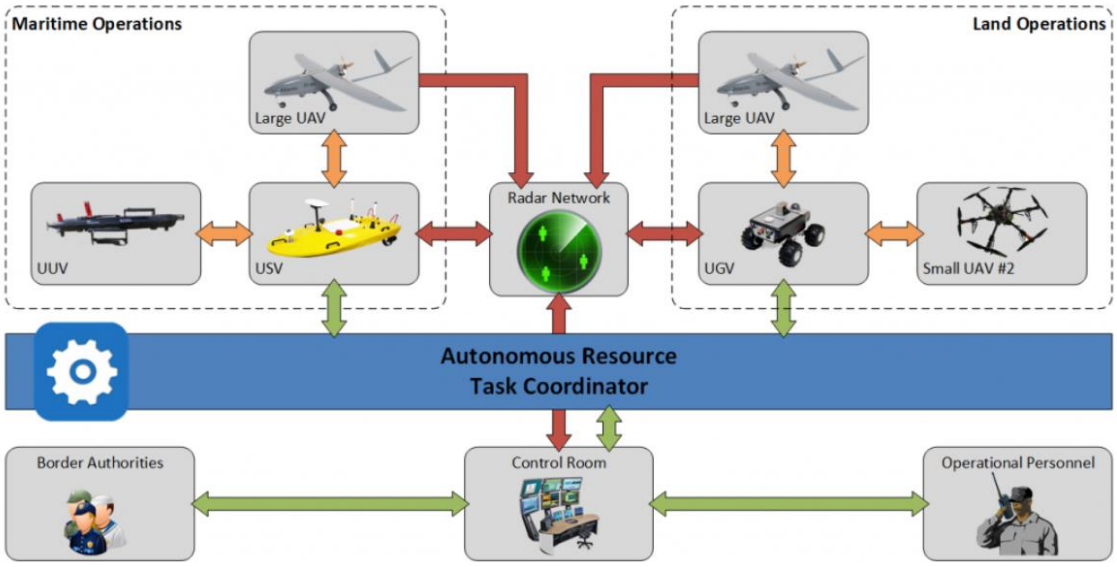

Figure 1: Illustration of Roborder fully functional autonomous border goal.Created by the Consortium.

What may appear as an Orwellian, dystopian, sci-fi scenario is, in fact, a project approved for funding under Horizon 2020, a European fund dedicated to civil research and innovation. This project aims to create a fully autonomous border system to detect illegal border activities. While this may seem like a practical solution to combat human trafficking and environmental disasters at sea, it directly impacts those who may seek refuge on European shores. Migrants are the most affected by the deployment of these type of projects and end up being used as technological testing grounds[3]. Who worries about their right to privacy, seeking asylum, due process and so many others? What happens if their rights are violated by the usage of technology? Who is accountable for it? The Union, those developing the tools?

[2] Roborder Consortium, 'Roborder' *(Roborder)* <https://roborder.eu/> accessed 7 July 2023.
[3] Petra Molnar, 'Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up' (EDRi & Refugee Law Lab 2020).

Since the onset of the migration crisis in 2015, migration policies within the EU have become increasingly stringent. Despite the continued influx of migrants reaching EU borders, EU institutions and agencies have embraced a more hostile approach towards these crossings[4]. The adoption of technology in migration management is not a novel concept but has gained prominence due to globalization and the promise of creating an efficient system, reducing costs, and enhancing security[5]. However, these systems have been proven to be flawed, relying on biased data and perpetuating societal power imbalances. Paradoxically, increased border technology surveillance has been shown to contribute to a higher number of migrant deaths as they resort to riskier routes to evade detection[6]. Consequently, the question arises as to why human rights impact assessment is not performed and these technologies persistently continue to be used to deter migrants, and not ensure their safety.

Firstly, migration management has become intertwined with securitization, with law enforcement entities tasked with ensuring border safety and preventing immigration-related disorder[7]. Secondly, new actors, including private companies, have entered the field of migration management technologies, leading to the delegation of migration control functions to these entities[8]. Thirdly, the EU investment on migration has grown considerably[9]. Unfortunately, amidst this process, the voices and rights of migrants have been overshadowed. A self-fulling loop of public demand and private supply has emerged under the guise of ensuring security.

However, it is important to note that partnerships with private entities and investments in technology do not inherently result in disastrous outcomes. Therefore, this research aims to provide recommendations on how to safeguard the fundamental rights of migrants when establishing EU-private partnerships for the development of

[4] Gregorio Sorgi and Jacopo Barigazzi, 'What's Actually in the EU's Migration Deal?' (*POLITICO*, 10 June 2023) <https://www.politico.eu/article/eu-migration-deal-asylum-seekers-relocation/> accessed 1 July 2023.
[5] Costica Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues* (European Parliament 2021).
[6] Sam Biddle Devereaux Ryan, 'Mapping Project Reveals Locations of U.S. Border Surveillance Towers' (*The Intercept*, 20 March 2023) <https://theintercept.social/?p=423563> accessed 7 July 2023.
[7] Graham Hudson and Idil Atak, 'Introduction' in Graham Hudson and Idil Atak, *Migration, Security, and Resistance* (1st edn, Routledge 2021).
[8] Eleftherios Chelioudakis, 'Privatization of Security, Border Management, and Defense in the EU: Does Reliance on Tech Companies Erode States' Sovereignty?' in Graham Hudson and Idil Atak, *Migration, Security, and Resistance* (1st edn, Routledge 2021).
[9] Statewatch & Transnational Institute, 'At What Cost? Funding the EU's Security, Defence, and Border Policies, 2021–2027' (*At what cost?*) <https://eubudgets.tni.org/> accessed 29 June 2023.

migration management technologies funded by the EU. The research begins by establishing a baseline of the most commonly employed technologies and identifying potential violations of fundamental rights. It proceeds with an analysis of relevant EU legislation governing migration competences within the Union, followed by an examination of the AI Act, the Directive on Corporate Sustainability Due Diligence, and the regulations governing Horizon Europe and its predecessor programs. The research then delves into an exploration of the specific funds supporting the development of these technologies in the EU and the nature of the projects being approved and implemented.

The final chapter offers a comprehensive understanding of the private entities that benefit most from the development of these technologies and how they overlap with projects granted under Horizon Europe, the European Defence Fund, and their predecessors. Additionally, it examines the role of lobbying and the interconnections between these entities, EU institutions, and agencies.

Given the dynamic nature of the research topics, updates up until June 2023 and projects approved until May 2023 have been taken into consideration.

It is crucial to emphasize that technology, in and of itself, is neither inherently good nor bad; it is the choices made by humans, neglecting its limitations and utilizing it to further political agendas, that have consequences. At the core of migration management are migrants themselves, individuals seeking safety and security. The EU's positioning on this issue sets international precedents, and prioritizing securitization over safeguarding the fundamental rights of these communities compromises the values upon which the Union was founded.

METHODOLOGY

This chapter discusses the methodological considerations and decisions undertaken during the research process while acknowledging the encountered limitations. The research aims to examine the extent to which the fundamental rights of migrants are disregarded when the EU forms partnerships with private entities for the development of migration management technologies under EU funds, such as Horizon Europe and the European Defence Fund. Given the interdisciplinary nature of the topic,

an approach combining migration studies, new technologies, business, political sciences, with a primary focus on EU institutions, agencies, and law is essential.

Chapter 1 serves as the foundation for understanding migration management technologies, their evolving application within the EU, and practical examples of their deployment across borders. The initial section draws inspiration from two books: 'Emerging security technologies and EU governance: actors, practices, and processes'[10] and 'Migration, security, and resistance: global and local perspectives.'[11] These sources complement each other and offer a comprehensive perspective on the evolving significance of AI in the EU context. Additionally, official information published by various EU agencies and institutions through reports and briefings complements this research.

The second part of this chapter is structured to analyze four distinct types of AI systems that can be employed for migration management purposes. The selection of these system types was based on reports from civil society organizations such as Statewatch and Refugee Law Lab, which have produced numerous relevant studies and reports in this field. Concurrently, a compendium of practical examples titled 'Automating Immigration and Asylum: The Uses of New Technologies in Migration and Asylum Governance in Europe'[12] was utilized to illustrate the applications of these technologies. This report was shared by Petra Molnar during the webinar 'Protect not Surveil,'[13] as it was considered a up-to-date compendium of initiatives deployed at the borders.

Chapter 2 undertakes a comprehensive legal analysis essential for this research. It begins by elucidating the legal framework and evolution of migration policies within the EU. Subsequently, it delves deeper into assessing whether the AI Act incorporates adequate safeguards to uphold the fundamental rights of migrants. Additionally, it conducts a detailed examination of the Directive on Corporate Sustainability Due Diligence to determine its potential to foster a more promising future for companies

[10] Antonio Calcara, Raluca Csernatoni and Chantal Lavallée (eds), *Emerging Security Technologies and EU Governance: Actors, Practices and Processes* (Routledge/Taylor & Francis Group 2020).
[11] Graham Hudson and Idil Atak (eds), *Migration, Security, and Resistance: Global and Local Perspectives* (Routledge 2022).
[12] Derya Ozkul, 'Automating Immigration and Asylum: The Uses of New Technologies in Migration and Asylum Governance in Europe' (Oxford: Refugee Studies Centre, University of Oxford 2023).
[13] Picum, 'WEBINAR - Will the AI Act #ProtectNotSurveil People on the Move?' (*Youtube*, 19 April 2023) <https://www.youtube.com/watch?v=gurs1XwSvZ4> accessed 20 April 2023.

operating within and outside the single market while ensuring the protection of fundamental rights. The chapter concludes by scrutinizing the regulations of the funds and their legal safeguards concerning fundamental rights, alongside their legal application and structure.

Chapter 3 presents a comprehensive analysis of the various funds available within the EU that contribute to financing migration initiatives. The initial summary draws inspiration from the report of the Left Group[14] and has been subsequently updated through access to EU sources.

The chapter focuses specifically on projects related to migration management technologies funded under the programs FP7, Horizon 2020, and Horizon Europe until May 2023. These funds were selected for analysis due to the availability of documentation and prior analysis conducted by multiple authors. Notably, these funds are of particular interest as they encompass civil innovation that may have dual-use applications. Consequently, innovations developed in the field of migration, particularly in the realm of new technologies, can easily be adapted for defence and military purposes. This analysis contributes to Chapter 4, which examines the overlap of stakeholders within defence funds and civil innovation funds. For the analysis of projects, a pre-existing collection of projects from Statewatch[15] on FP7 and Horizon 2020 was utilized. Their online database was consulted for reference. Regarding Horizon Europe, I personally conducted the analysis by downloading the most up-to-date database of approved projects from Cordis. Subsequently, projects related to migration management technologies were identified. A total of 68 projects were analyzed and categorized following the same classifications identified in Chapter 1.

During the analysis, it became apparent that the disclosure of project documents was not standardized. Some consortia made their project reports available on their websites, while others did not. Consequently, I endeavored to collect as many reports as possible, resulting in a total of 182 reports specifically related to Horizon 2020. Unfortunately, due to the lack of a centralized EU database for such reports, it was not possible to gather reports pertaining to FP7 and Horizon Europe.

[14] Jacqueline Andres, 'EU Border Regime Profiteering from Dehumanisation and Mythologised Technologies' (GUE/NGL 2021).
[15] Jane Kilpatrick and Chris Jones, 'A Clear and Present Danger Missing Safeguards on Migration and Asylum in the EU's AI Act' (Statewatch 2022).

Subsequently, a text analysis of these reports was conducted using Orange, an open-source data visualization, machine learning, and data mining toolkit developed by the University of Ljubljana. With the assistance of Orange, a term frequency analysis with visualization through a wordcloud was performed. It was also included a bi-gram analysis. The goal was to understand that through text analysis new conclusions can be obtained. In this context, the goal was to understand the presence of the term ‘rights’ and ‘security’ in the documents collected. Further analysis can be conducted.

Chapter 4 provides a detailed analysis of PMSCs' involvement in EU-private partnerships, focusing on their increased project acquisition under Defence funds and the funds examined in Chapter 3. It draws on a previous analysis of Defence fund projects and explores the lobbying profiles of key stakeholders to understand the complex relationship between PMSCs and EU institutions, and agencies.

Limitations

Several limitations are present in this research. Firstly, the research question pertains to a subject that is continuously evolving, with new updates emerging regularly. The analysis in this study concludes in June 2023, and therefore, more time would be required for a more comprehensive analysis. Additionally, due to the complexity of involving various stakeholders, it was not feasible to contact EU institutions and agencies to acquire all relevant documents. Conducting such consultations in the future could be beneficial.

Furthermore, Chapter 2 will require ongoing updates until the legislation under examination is officially approved. Additionally, a more in-depth analysis of the legal documents, which was constrained by my limited familiarity with legal text, could be conducted in the future.

Concerning Chapter 3, the ultimate objective should be to analyze all identified funds to provide a more comprehensive understanding of the application of EU funds within the migration sector. However, due to time constraints, a complete analysis was not possible. Furthermore, regarding the text analysis, a more detailed examination can be conducted in the future to establish a more robust analytical framework, particularly with a broader range of collected documents. The present sample is not fully representative, with disparities in the availability of project documents.

Lastly, for Chapter 4, it is necessary to analyze the projects approved under the European Defence Fund to complete the research. This database was not available online.

Chapter 1: Migration Management Technologies: the evolution, current usage in the EU and fundamental rights that may be impacted.

Since the migration crisis started, the number of border walls and fences has grown dramatically in the EU/Schengen area. Between 2014 and 2022, border fences with high walls and barbed wire were erected and shaped physically for the prevention of irregular migration and combating terrorism. To this date, the EU/Schengen area counts 19 border or separation fences for an extension of 2048 km[16].

Today, with the incorporation of new technologies, States are not limited to these physical borders. They were reshaped in a 'smart' digital border that operates and surveils sea, air and land with real-time information, accuracy, and preparedness to intervene. Tools such as drone surveillance, border systems with biometric collection data, and Automated Border Control (ABC) gates in airports are part of the daily border surveillance system.

Furthermore, the application of these tech tools stopped being limited to the border context and expanded to the entire migration process and external jurisdictions of operation[17]. From predicting migration flows by analyzing social media data to visa and asylum granting systems that collect biometric data since the moment of application, to internal tools that relocate migrants and even speech recognition support systems for citizenship test training, among many others[18]. The exposure of migrants to tech systems is not limited to these applications, and the future tools that may arise are infinite.

The EU/Schengen area has prioritized incorporating innovation tools in immigration processes and systems to speed up decision-making and process large amounts of data. However, the dichotomy between including these systems and developing and implementing legislation safeguarding fundamental rights of migrants and their needs in the developing phase is dramatically disproportional[19]. Technology

[16] Costica Dumbrava, 'Walls and Fences at EU Borders' (EPRS, PE 733.692 2022).
[17] Molnar (n 3).
[18] Ozkul (n 12).
[19] Molnar (n 3).

can bring many benefits but pose critical human rights violations if not implemented properly. Using vulnerable communities to test innovation and ensure national and regional security can oppose the values of the Union.

The constant need for innovation helped blend the line of public funds with private entities' involvement. It created a self-fulfilling loop of private supply and public demand. Dual-use technologies became more present with the help of EU funds such as Horizon 2020 and Horizon Europe[20].

Synergies between private and public entities do not need to be classified automatically as harmful. However, in the migration management sector in the EU, an environment of securitization is growing, and not many bidding legislations exist to balance fundamental rights in these relationships. Blurry lines grow on accountability and responsibility of ensuring a safe and responsible application and development of technology in the migration sector. As observed and further developed in this chapter, Migration Management Technologies are not required be aligned with fundamental rights standards to be developed and deployed in the EU.

This chapter provides an overview of the evolution of migration and border management practices in the European Union, focusing on how the integration of new technologies has reshaped and expanded physical borders, created a new layer of digitalization and surveillance, and how policy-makers used them to established a direct connection between immigration and criminality.

The main types of technologies currently being deployed or tested in EU borders will be examined, with an explanation of how these technologies function and practical examples of their positive and negative applications in migration management by EU member states or EU-funded projects. It is worth noting that drone surveillance will not be analyzed, as extensive research has already been conducted in this area.

These studies suggest that drones are actively contributing to the militarization of ordinary borders. This militarization process is part of a larger framework that incorporates a range of security technologies, including satellites, sensors, and smart walls. The integration of these technologies poses significant implications for human rights.[21] [22]

[20] Bruno Oliveira Martins, Kristoffer Lidén, and Maria Gabrielsen Jumbert, 'Border Security and the Digitalisation of Sovereignty: Insights from EU Borderwork' (2022) 31 European Security 475.
[21] Peter Burt and Jo Frew, 'Crossing A Line: The Use of Drones to Control Borders' (Drone Wars UK 2020).
[22] Calcara, Csernatoni and Lavallée (n 10).

The conclusion of this section emphasizes the critical importance of conducting fundamental rights impact assessments before and after developing and deploying technologies intended to impact migration management. It also highlights the need to consider all stakeholders when developing these tools and the urgency of establishing legislation that includes the technical specificities of these technologies. Furthermore, the chapter explores the possibility of creating a quality label from an independent Fundamental Rights Agency at the EU level, certifying fundamental rights-compliant tools and systems for migration purposes.

1.1 Historical evolution of including technology in border management at the EU borders.

From a historical vantage point, the exigency for border management has arisen from the imperative of states knowing their populace within and beyond their borders. As societies evolved over time, mobility patterns underwent a transformation, leading to communities with greater fluidity. However, the inability to discern the identities of individuals posed a heightened risk of permitting dangerous actors to enter their borders. Consequently, there was a growing need for implementing techniques and procedures to monitor mobile individuals and facilitate the unrestricted movement of some while regulating the mobility of others[23].

The development of border management techniques progressed incrementally over time. By the advent of the First World War, national passports had become ubiquitous, and their standardization was further hastened following the Second World War[24]. However, as the need for more reliable means of verifying documents and detecting forgeries became increasingly pressing, states began establishing border institutions and infrastructures, including passport checks, to address these concerns. Simultaneously, similar needs were arising in criminal justice by needing to keep track of recurring offenders.

To enhance migration management, points-based immigration systems were created. These systems operate on the premise that a noncitizen's eligibility for immigration is contingent upon their ability to attain a score above a predetermined

[23] Dumbrava (n 5).
[24] Hudson and Atak (n 7).

threshold in a scoring system. The scoring system takes into account various factors, including educational attainment, financial resources, ties to the host country, language proficiency, presence of a job offer, and other relevant considerations. The first system was implemented by Canada[25]. They are particularly questionable when adapted for new technologies especially if criteria are biased and scores are taken into consideration for future applications.

Subsequently, fingerprint identification became widely adopted, with other biometric data being collected manually. With the advent of digital technologies, automated storage, capture, and analysis of biometric markers became possible, creating the first databases.

The current EU migration management system comprises three principal domains that require exploration to comprehend the integration of emerging technologies in migration management and the potential weaponization of technology in this context. These areas are **(1) EU IT Systems, (2) European Integrated border management, encompassing Frontex and EUROSUR,** and **(3) EU funds allocated to R&D of new technologies in the security sector**. Understanding the relationship between these three elements is vital for assessing the implications of the use of technology in migration management, particularly concerning the possible encroachment of fundamental rights. As explained in the methodology section, this idea was inspired by combining two books and respective taxonomies, (1) Migration, security, and resistance: global and local perspectives[26] and (2) Emerging security technologies and EU governance: actors, practices and processes[27].

EU Information Systems[28]

The establishment of the Schengen area between 1995 and 2004 marked the genesis of the first generation of EU information systems for asylum, visa, and border management, including the **Schengen Information System (SIS), European dactyloscopy database (Eurodac), and the Visa Information System (VIS).**

[25] Adam Donald 'Immigration Points-Based Systems Compared' (*BBC News*, 16 October 2014) <https://www.bbc.com/news/uk-politics-29594642> accessed 5 July 2023.
[26] Hudson and Atak (n 11).
[27] Calcara, Csernatoni and Lavallée (n 10).
[28] Dumbrava (n 5).

In 2013, the European Commission introduced the **Smart Borders Package**, which proposed the creation of two new systems: an **entry/exit registration system (EES)** and a **European Travel Information Authorisation System (ETIAS),** both following international trends coming from the US. However, the package attracted substantial criticism, leading to a failure to reach an agreement.

Following the migration crisis of 2015, the EU's focus shifted towards securitization and ensuring border safety, leading to momentum in migration management. In April 2016, the EU Commission released a communication emphasizing the need for more robust and smarter information systems, with proposals to improve existing IT systems, data architecture, and information exchange to address existing information gaps. This was followed by several legislative proposals to expand existing systems, establish interoperability, and create new ones.

As of 2023, the configuration of EU Information systems, under the responsibility of the European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice (eu-LISA), has undergone significant evolution. SIS, Eurodac, and VIS are now fully operational, and their databases include new categories of alerts and process a comprehensive set of biometric data of both Member State nationals and Third Country nationals (TCNs). The Entry/Exit System (EES) is expected to be fully operational by the end of 2023, and the European Travel Information Systems (ETIAS) will complement the IT systems by 2024.

To further expand the EU IT systems, the **European Criminal Record Information System for third-country nationals (ECRIS-TCN)** is expected to be established, allowing for the ascertainment of criminal records held by other Member States on third-country nationals, stateless persons, or EU citizens who also hold the nationality of a third country. However, concerns have been raised about including the latter category, potentially creating 'second-class' EU citizens. It is worth noting that eu-LISA has provided no updates since 2022 when it was expected for the system to be fully operational.

In 2018, the eu-LISA mandate underwent a transformation to include the development and management of EU information systems, particularly in the areas of borders and visas, police and judicial cooperation, as well as asylum and migration. The purpose of this move was to address the complex and extensive nature of EU IT systems

and promote their interoperability within the EU/Schengen area, and it will encompass four main components:

1) European Search Portal (ESP):
2) Shared biometric matching service (sBMS);
3) Common Identity Repository (CIR);
4) Multiple identity detector (MID).

While interoperability could improve operational efficiency and enhance the quality of the database used by the EU/Schengen area, it is essential to note that this involves integrating the personal data of third-country nationals (TCNs) with judicial and criminal systems. **Therefore, it is imperative to manage interoperability in a cautious and prudent manner, with adequate safeguards to protect the right to privacy and ensure proper data collection. Civil society organizations and FRA believe that this interoperability can lead to the violation of fundamental rights and unjustifiable targeting of TCNs**[29] [30]**.**

European Integrated Border Management (EIBM)[31]

The European Union has been gradually developing the European Integrated Border Management (EIBM) system to enable coordination and cooperation among national and European authorities in managing borders. This led to the establishment of the **European Border and Coast Guard,** a shared responsibility of the **European Border and Coast Guard Agency (Frontex) and national authorities**. The EIBM is based on a four-tier-access control model that includes measures beyond external borders, such as information exchange and training activities, as well as measures within the Schengen area, such as police cooperation and return operations.

Frontex has become a significant player in addressing migration management issues at the EU border and is expected to have 10,000 operational staff by 2027[32]. In

[29] European Union Agency for Fundamental Rights., *Under Watchful Eyes: Biometrics, EU IT Systems and Fundamental Rights.* (Publications Office 2018) <https://data.europa.eu/doi/10.2811/136698> accessed 4 July 2023.
[30]Chris Jones, 'Data Protection, Immigration Enforcement and Fundamental Rights: What the EU's Regulations on Interoperability Mean for People with Irregular Status' (*Statewatch*, 2019) <https://www.statewatch.org/publications/reports-and-books/data-protection-immigration-enforcement-and-fundamental-rights-what-the-eu-s-regulations-on-interoperability-mean-for-people-with-irregular-status/> accessed 12 July 2023.
[31] ibid.

2019, the agency published a Technical and Operational Strategy for the EIBM system, which advocates for a 'knowledge-based border control' approach. This approach relies on pre-arrival information and effectively utilizes relevant information systems to sustain European border and coast guard capabilities.

To optimize Frontex's mandate in 2014, the European Border Surveillance System (EUROSUR) was established. EUROSUR aims to detect, prevent, and combat illegal immigration and cross-border crime at EU external borders, including land, maritime, and air border surveillance. The system follows an intelligence- and risk analysis-driven approach and supports the establishment of national and European situational pictures at borders. A situational picture is defined as an aggregation of georeferenced near-real-time data and information received from different authorities, sensors, platforms, and other sources.

Apart from its Technical and Operational Strategy, Frontex also leverages the **EUROSUR Fusion Services** to bolster its technological capacities, such as through automated vessel tracking and detection capabilities. As part of its responsibilities, Frontex conducts both **general annual and strategic risk analyses** using anonymized data and an integrated risk analysis model to address all pertinent aspects of the EIBM system and **create a pre-warning mechanism**. Additionally, Frontex performs **vulnerability assessments** to assess Member States' readiness and capacity to manage current and potential challenges at the EU's external borders.

Frontex is equipped with cutting-edge technology relevant to its mandate of assessing, surveilling, and protecting EU external borders in collaboration with Member States. However, the agency has been controversial, and its activities have been linked to pushbacks[33]. The EU currently has an agency with law enforcement capabilities that is fully committed to ensuring the effective functioning and security of external borders through the use of new technologies. Nevertheless, when security and law enforcement is the primary goal, human rights can be easily compromised. It is, therefore, critical to ensure that Frontex is not fully equipped with all these tools without also guaranteeing that human rights are respected and safeguarded.

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[32]Frontex, 'About' (*Frontex)* <https://frontex.europa.eu/careers/standing-corps/about/> accessed 24 April 2023.

[33] Katy Fallon, 'Revealed: EU Border Agency Involved in Hundreds of Refugee Pushbacks' *The Guardian* (28 April 2022) <https://www.theguardian.com/global-development/2022/apr/28/revealed-eu-border-agency-involved-in-hundreds-of-refugee-pushbacks> accessed 22 April 2023.

EU funds allocated to R&D of new technologies in the security sector[34]

The European Union's commitment to research and innovation (R&D) is demonstrated by its substantial funding programmes, which have enabled the development of technologies that can be applied to securitization and migration management. The EU's Framework Programme 7 (FP7), launched in 2007 with a funding of €50 billion (an increase of 41% in comparison with FP6), marked the first time that the theme of 'Security' was included as a topic for project submission, demonstrating the EU's focus on addressing security issues through R&D. Following the success of FP7, the EU launched Horizon 2020 in 2014 with a funding allocation of €80 billion for the period of 2014-2020, and more recently, Horizon Europe was introduced for the period of 2021-2027 with a funding allocation of €95.5 billion. Further information on funds can be found on chapter 3.

While the EU's R&D funding programmes do not allow for direct funding of defence and military technology, they do allow for funding of dual-use technology, which can have both civilian and military applications[35]. This provision has been instrumental in developing new security technologies in Europe, and has allowed various actors, including defence companies, to participate in EU-funded consortia focused on developing security solutions utilizing this type of technology. Chapters 3 and 4 of this study will provide an in-depth analysis of this provision.

However, the development of such technologies raises important ethical and legal questions, particularly concerning the potential for their use in violating individuals' rights and freedoms. As such, it is crucial for these projects to be subject to rigorous ethical and legal scrutiny and for safeguards to be put in place to prevent misuse or unintended consequences.

It is also essential to recognize the potential limitations of technology in addressing complex social and political issues such as migration management. While technological solutions can contribute to improving border security and managing migration flows, they are not a panacea and must be accompanied by broader policy measures that address the root causes of migration and ensure the protection of individuals' rights and dignity.

Overall, while the EU's funding ecosystem has enabled the development of technologies that can be applied to securitization and migration management, it is

[34] Calcara, Csernatoni and Lavallée (n 10).
[35] Bruno Oliveira Martins, Kristoffer Lidén, and Maria Gabrielsen Jumbert (n 20).

crucial for such technologies to be developed and utilized in a manner that is consistent with the EU's values and principles and takes into account their potential ethical and legal implications. Unfortunately, as further discussed in the next chapter, this is not always the case.

An analysis of the three mechanisms adopted by the EU to introduce technology in migration management reveals that innovation has consistently been a priority and a challenge. Technology is now an integral part of the EU's migration management ecosystem. However, the potential conflict between promoting innovation and neglecting human rights safeguards is a cause for concern.

1.2 Fundamental Rights Implications of Technologies Deployed in the EU Migration Management Sector

Due to the lack of legal definition within EU law and for this research purposes, Migration Management Technologies can be understood as digital tools and methods used to manage migration more efficiently.

In the current innovation environment, these new technologies are prevalent throughout all stages of the migration process. However, they tend to prioritize the interests and voices of state authorities while neglecting those of migrants[36].

The political priorities and security discourse surrounding migration management have led to a biased development of new technologies, compromising their potential benefits. The proliferation of stakeholders in this sector in recent years has made accountability less clear. Despite these challenges, new technologies have the potential to benefit all stakeholders involved in migration management, provided that human rights are not neglected.

To analyze the impact of technology on migration management, this study focuses on four main types of technology commonly found in current or research-phase tools. However, it is important to note that the types of technology explored in this analysis are not exhaustive but were selected by taken into consideration analysis undertaken by other researchers that covered the same selection[37]. The objective of this

[36] Ozkul (n 12).
[37] Kilpatrick and Jones (n 15).

study is to demonstrate that while new technologies can offer numerous benefits, they can also pose significant risks to human rights.

1.2.1. Automated biometric systems

The AI Expert Group appointed by the European Commission defined a **biometric categorization system** as:

> An AI system for the purpose assigning natural persons to specific categories, such as sex, age, hair colour, eye colour, tattoos, ethnic origin or sexual or political orientation, based on their biometric data. [38]

Also, **biometric data** was defined as

> Personal data resulting from specific technical processing relating to the physical, physiological or behavioural characteristics of a natural person, which allow or confirm the unique identification of that natural person, such as facial images or dactyloscopy data.[39]

Biometric identification has a rich historical evolution, beginning with the implementation of automated fingerprint identification systems and progressing towards more sophisticated face recognition systems. However, biometric identification is not limited to these modalities alone, with other systems recognizing iris, palm, and DNA identification. Despite the personal nature of these biometric features, research has shown that the utilization of multimodal biometrics - the use of multiple biometric indicators - promotes more accurate identification[40].

In addition to its evolution and the utilization of multiple biometric indicators, the primary benefit of biometrics lies in its high security and the assurance of personal identification it provides. Financial institutions, for instance, rely on these systems to prevent unauthorized access to personal accounts, while governments have developed identification cards with integrated biometric features to authenticate personal identity and ensure safety in procedures such as voting and naturalization.

[38] European Commission, 'Rules on Biometrics in the AI Proposal' Ref. Ares(2021)5674926 – 16/09/2021.
[39] ibid.
[40] Dumbrava (n 5).

In contrast, relying solely on biometric identification is not advisable due to the possibility of encountering 'false rejections' or 'false acceptances' resulting from data mismatches. Moreover, any changes in physical features such as haircuts, eyebrow lines, or facial hair growth could pose significant challenges to the algorithm's ability to perform accurate identification. Furthermore, taking verification pictures with low-quality camera models or significant changes in the surroundings may also cause inaccuracies when compared to the original identification sample[41].

In the realm of migration management, biometric systems have become ubiquitous in the EU. The databases of all EU information systems managed by eu-LISA have been collecting biometric data. With the establishment of interoperability rules between existing systems and those to be implemented in the future, the EU will have access to a vast database containing information on individuals from Third National Countries. This database will link migration requirements with criminal records[42]. Simultaneously, research conducted by FRA on the utilization of biometric data in large-scale EU migration databases has underscored the significance of data quality, particularly the precision of alphanumerical data and biometric identifiers, in relation to the safeguarding of personal data[43].

A less worrisome application of technology has been deployed in Latvia to aid in migration integration efforts. In 2019, the Latvian government conducted a survey among non-citizens and found that the fear of failing necessary citizenship tests was discouraging this community from applying for citizenship. As a response, in July 2021, the Office of Citizenship and Migration Affairs introduced a speech recognition system developed by Tilde, that helps migrants prepare for the citizenship application process. This self-test tool was implemented to assist potential applicants in testing their speech and knowledge of the Latvian national anthem[44].

The increasing use of automated biometric systems in migration management raises concerns about their compliance with fundamental rights. Biometric systems pose challenges to ensuring the right to privacy, non-discrimination, due process, and freedom of movement. The collection, storage, and processing of sensitive biometric data exposes individuals to potential privacy violations, necessitating safeguards to

[41] 'Biometrics (Facts, Use Cases, Biometric Security)' <https://www.thalesgroup.com/en/markets/digital-identity-and-security/government/inspired/biometrics> accessed 24 April 2023.
[42] Dumbrava (n 5).
[43] European Union Agency for Fundamental Rights. (n 29).
[44] Ozkul (n 12).

protect personal information. Biometric systems may disproportionately affect certain groups, such as those with distinctive physical features, leading to potential discrimination, necessitating the need to mitigate potential biases during the development and implementation of these systems.

Additionally, the deployment of biometric systems may infringe on the right to due process, as individuals may be wrongly identified due to technical limitations or errors, leading to wrongful accusations, arrests or immigration detention. Finally, the use of biometric systems in migration management may restrict individuals' freedom of movement by limiting their ability to enter or exit a country based on biometric identification.

1.2.2. Automated risk assessments and decision-making

Automated risk assessments and decision-making refer to technology that makes decisions and assessments with various levels of human involvement. The decision-making algorithms[45] are automated by rules, predictions, constraints, and logic determining how micro-decisions[46] are made. Humans set these micro-decisions to expedite real-time and higher-volume decisions and enable a new paradigm of decision-making in which humans must work on abstract possibilities to set the most concrete and complete baseline for the machine.

Therefore, **4 management models**[47] can be applied when implementing these systems: (1) human in the loop, in which the machine assists the human (e.g, migration officer, border guard), (2) human in the loop for exceptions, when most of the decisions are taken by the system, but humans manage the exceptions, (3) Human on the loop, in which the machine takes the decisions and the human reviews outcomes and adjusts parameters in future decisions. (4) Human is out of the loop; the human monitors the machine.

[45] Michael Ross and James Taylor, 'Managing AI Decision-Making Tools' [2021] *Harvard Business Review* <https://hbr.org/2021/11/managing-ai-decision-making-tools> accessed 18 April 2023.
[46] ibid.
[47] ibid.

Early support and decision-making systems[48] relied on symbolic artificial intelligence and were called expert systems, designed to help human experts to make decisions. These systems had several advantages, such as not requiring significant computing power to be set up, and they were relatively transparent and could be audited by humans. On the other side, they could not be applied to complex tasks that required the consideration of several independent variables and had to be set manually.

Over time until the current days, systems evolved and started depending on machine learning algorithms. This breakthrough allowed machines to process larger amounts of data in a short time and to 'learn' by applying machine learning techniques. For example, he German Federal Office for Migration and Refugees implemented the 'Integrated Identity Management' (IDM) system from 2016 to 2020 to improve the efficiency of asylum procedures. IDM software aided BAMF caseworkers in registering asylum seekers and gathering essential information about their origins and travel history. The system incorporated various tools such as automated name transcriptions, dialect identification, picture checks, and smartphone data extraction. These tools aimed to enhance accuracy and facilitate decision-making[49].

However, the results of applying this kind of technology can become catastrophic. The New York Civil Liberties Union and Bronx Defenders have filed a lawsuit against the U.S. Immigration and Customs Enforcement for utilizing an algorithm that has been manipulated to detain virtually all individuals arrested for immigration violations, regardless of their risk level. The algorithm, which was intended to assess the risk of flight and danger posed by individuals, has been altered to remove the possibility of release or bond for low-risk individuals, thereby violating their constitutional and legal rights. The no-release policy has had detrimental effects on the detainees and their families, causing significant harm and suffering[50].

The shortcomings related to the successful implementation of automated decision-making systems reside in the **potential bias presented in the data sets** that

[48] European Agency for the Operational Management of Large Scale IT Systems in the Area of Freedom, Security and Justice., *Artificial Intelligence in the Operational Management of Large-Scale IT Systems: Research and Technology Monitoring Report : Perspectives for Eu LISA.* (Publications Office 2020) <https://data.europa.eu/doi/10.2857/58386> accessed 18 April 2023.

[49] 'AI-Enabled Identification Management of the German Federal Office for Migration and Refugees (BAMF)' (*Migration data portal*) <https://www.migrationdataportal.org/data-innovation-59> accessed 5 July 2023.

[50] Sam Biddle, 'ACLU Sues to End ICE's Rigged Algorithm for Detaining Immigrants' (*The Intercept*, 2 March 2020) <https://theintercept.com/2020/03/02/ice-algorithm-bias-detention-aclu-lawsuit/> accessed 5 July 2023.

serve as machine training tools. These datasets need to be as representative of populations as possible to decrease the possibility of bias. Testing a specific system in different populations when the dataset is not representative is dangerous and unfair. Simultaneously, they impact massively decisions and it can be difficult to explain if black-box models[51] are used by creating a false sense of impartiality and reliability[52].

When reviewing the application of these technologies in migration management in the EU, its diverse applicability is easily observed from aid on decision-making on visa applications, requests for international protection, immigration detention, and even relocation and settlement after arrival. The decisions generated by these technologies directly impact migrants' lives.

Even though the UK does not belong to the EU, a critical case must be covered. The '**streaming algorithm**'[53] used by the **UK Home Office** to classify visa applications categorized applicants by their country of origin by placing nationalities in different categories and prioritizing specific ones. The civil society Foxglove challenged the algorithm of the UK Home Office to suspend it, and later it was made public by Foxglove that a 'secret list of suspect nationalities' was given to the system.

On the other hand, changing the parameters makes it possible to create a tool with a similar purpose but with less risk of bias. In the **Netherlands**, the Immigration and Naturalisation Service's A&B Directorate[54] uses a 'case matcher system' when analyzing asylum applications. This tool uses text mining to create a scoring system that ranks cases and documents. Using filters, caseworkers can find similar cases, compare them, save time in the analysis and decide consistently in visa applications.

Regarding Risk Assessment tools, the European Commission's Joint Research Centre developed the Global Conflict Risk Index, which calculates the statistical risk of armed conflict in several countries for up to four years[55]. The shortcoming related to

[51] Cynthia Rudin, 'Stop Explaining Black Box Machine Learning Models for High Stakes Decisions and Use Interpretable Models Instead' (2019) 1 Nature Machine Intelligence 206 <https://www.nature.com/articles/s42256-019-0048-x> accessed 18 April 2023.
[52] European Union Agency for Fundamental Rights., *Data Quality and Artificial Intelligence: Mitigating Bias and Error to Protect Fundamental Rights.* (Publications Office 2019) <https://data.europa.eu/doi/10.2811/546219> accessed 4 July 2023.
[53] Statewatch, 'UK: Threat of Legal Challenge Forces Home Office to Abandon "Racist Visa Algorithm"' (*Statewacth*, 4 August 2020) <https://www.statewatch.org/news/2020/august/uk-threat-of-legal-challenge-forces-home-office-to-abandon-racist-visa-algorithm/> accessed 21 April 2023.
[54] Ozkul (n 12).
[55] Stamatia Halkia and others, 'The Global Conflict Risk Index: Artificial Intelligence for Conflict Prevention' (*JRC Publications Repository*, 20 December 2019) <https://publications.jrc.ec.europa.eu/repository/handle/JRC118746> accessed 21 April 2023.

these tools is the risk of algorithmic profiling of specific groups and communities that fit certain pre-selected characteristics and can incur a bias loop.

The premise that should not be neglected when deploying automated assessment and decision-making systems is that they will directly impact humans and need to be thought carefully when designed. Even though processing large numbers of data at high-speed analysis sound promising, datasets are not representative enough, and the teams developing these systems are not sufficiently diverse also, but the sectors they are deployed in are.

When considering migration management, the level of impact escalates. The negative implications can be colossal, compromise people in vulnerable situations, and promote power imbalances. These systems have been present for several years and need to be updated, legislated and always include the possibility for human supervision that encompasses a human rights perspective. T**hese systems feature serious risks of compromising fundamental rights such as the rights to privacy, non-discrimination, freedom of movement, to seek asylum and procedural rights**. However, as shown, alternatives already exist, such as analyzing the documents and similar cases in the visa applications instead of using the applicants' nationality as the base for decision, that allow these systems to help and decrease the possibility of bias replication. Setting rules of which parameters can be used when setting these systems could be a first step to integrating technology and making it comply with human rights.

1.2.3. Emotion recognition AI

Emotion recognition technologies, also referred to as affective computing, are cutting-edge methods that focus on identifying human emotions by analyzing, for example, facial expressions. These technologies frequently incorporate other physiological features, such as gaze direction, gestures, voice tone, heart rate, body temperature, and skin conductivity.)[56]

AI-based emotion detection systems rely mostly on a labelling method based on the Facial Action Coding System developed by American psychologist Paul Ekman[57]. According to Ekman, human emotions are inherent, universally shared, and can be categorized into six fundamental categories: fear, anger, happiness, sadness, disgust,

[56] European Parliament. Directorate General for Parliamentary Research Services. (n 2).
[57] Dumbrava (n 5).

and surprise.)[58]. By following this premise, AI researchers worked on automating the identification of these six categories in facial expressions.

Nowadays, emotion detection AI has been deployed in several contexts, and studies show that it can assess and identify human emotions more accurately than humans and provide real-time analysis of emotional states and instant feedback[59].

Nevertheless, Emotion detection technologies have proven shortcomings that can hinder the fulfilment of fundamental rights. The risks associated with these technologies start with the assumption, already refuted in some studies[60], that facial expressions are directly related to emotions. The nature of emotions is subjective, and it is mutable to context, interactions and cultural nuances that AI algorithms struggle to understand its complexity[61] and make it prone to bias[62]. It can be taken into consideration a programme conducted in 2007 by the US Homeland Security Department[63] that introduced the screening of Passengers, exhibited risks of racial and religious profiling and showed a lack of scientific validity. Also, gathering these data can raise ethical questions, including the misuse of emotional data and the potential for discrimination based on emotional states[64].

Simultaneously and despite these shortcomings, this technology has been deployed for law enforcement purposes, crime prevention, security checks and border control[65].

Some examples can be shown. In 2020, researchers at Harrisburg University announced they had developed face analysis software that could predict if someone was

[58] Paul Ekman Group, 'Micro Expressions' (*Paul Ekman Group*) <https://www.paulekman.com/resources/micro-expressions/> accessed 12 July 2023.
[59] Mark Purdy, John Zealley and Omaro Maseli, 'The Risks of Using AI to Interpret Human Emotions' [2019] *Harvard Business Review* <https://hbr.org/2019/11/the-risks-of-using-ai-to-interpret-human-emotions> accessed 16 April 2023.
[60] Lisa Feldman Barrett and others, 'Emotional Expressions Reconsidered: Challenges to Inferring Emotion From Human Facial Movements' (2019) 20 Psychological Science in the Public Interest 1 <https://doi.org/10.1177/1529100619832930> accessed 17 April 2023.
[61] Vidusha Marda and Ella Jakubowska, 'Emotion (Mis)Recognition: Is the EU Missing the Point?' (*ARTICLE 19*, 2 February 2023) <https://www.article19.org/resources/eu-emotion-misrecognition/> accessed 17 April 2023.
[62] Purdy, Zealley and Maseli (n 23).
[63] Spencer Ackerman, 'TSA Screening Program Risks Racial Profiling amid Shaky Science – Study' (*The Guardian*, 8 February 2017) <https://www.theguardian.com/us-news/2017/feb/08/tsa-screening-racial-religious-profiling-aclu-study> accessed 17 April 2023.
[64] AiMonarch, 'The Use of AI in Interpreting Human Emotion: Pros, Cons and Ethical Considerations – (*AiMonarch*, 2 February 2023) <https://aimonarch.com/the-use-of-ai-in-interpreting-human-emotion-pros-cons-and-ethical-considerations/> accessed 17 April 2023.
[65] Dumbrava (n 5).

a criminal. In 2021 the Chinese Company Taigusys[66] developed a system that can detect and monitor the facial expressions of multiple people and create detailed reports on each individual to track[67] their feelings.

In the EU, several EU-funded research projects have sought to develop AI-based emotion systems to identify human emotions in a border control context. The most controversial project was Intelligent Portable Control System (iBorderCtrl)[68] and it will be further explained in Chapter 3. This project aimed to:

> Enable faster and thorough border control for third-country nationals crossing the land borders of EU Member States, with technologies that adopt the future development of the Schengen Border Management. [69]

Due to the installed criticism concerning scientific validity, reliability and ethical concerns, the European Commission[70] cancelled the project. Currently, no AI-based emotion detection systems are implemented at the EU borders.

Clearly, emotion recognition AI is not ready to be used at a large scale and applied to decision-making that may impact individuals in vulnerable situations. Also, it lacks scientific evidence to support it. Even though it shows some promising applications with positive social impact in specific sectors, it is not ready to be used in immigration, crime prevention, and border control. **These technologies undermine the right to privacy, freedom of thought, the right to asylum, the right against self-incrimination, the right to a fair trial, effective remedy and other procedural rights.**

1.2.4. Predictive Analytics

Predictive analytics[71] uses data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data.

[66] Cheryl Teh, '"Every Smile You Fake" — an AI Emotion-Recognition System Can Assess How "Happy" China's Workers Are in the Office' (*Insider*, June 2021) <https://www.insider.com/ai-emotion-recognition-system-tracks-how-happy-chinas-workers-are-2021-6> accessed 17 April 2023.
[67] ibid.
[68] iBorderCtrl Consortium, 'The Project | IBorderCtrl' (*iBorderCtrl)* <https://www.iborderctrl.eu/The-project/> accessed 17 April 2023.
[69] ibid.
[70] Commission, 'Answer given by Ms Johansson on behalf of the European Commission' (Answer to MEP Ozlem Demirel) E-002653/2019(ASW).

Knowing what happened makes it possible to provide the best assessment for what will happen and be prepared for it.

Predictive analytics combines data analysis techniques, such as data mining (from several platforms, including social media), predictive modelling such as logistic regression, decision trees, and time series analysis. These methods are not exhaustive.

When applied to migration, predictive analytics can be used to map future phenomena including health issues outbreaks, weather patterns and migration flows from individuals fleeing war or natural disasters. States could use it to be prepared to receive migrants and mitigate large-scale migration by understanding migration routes and hot points, informing and optimizing border control operations or facilitating aid and humanitarian responses. For example, **IOM uses a 'displacement tracking matrix'** that:

> Gathers and analyses data to disseminate critical multi-layered information on the mobility, vulnerabilities, and needs of displaced and mobile populations, enabling decision makers and responders to provide these populations with better context-specific assistance. [72]

However, obtaining this data and its analysis can also contribute to escalating crossing risks for migrants. In the current securitization environment present at European borders, applying these tools could mean the increase of border surveillance and the persistence of pushbacks[73].

Several projects have been implemented at the EU level and by its member states. Since January 2022, the Early Warning and Preparedness System (EWPS)[74] operated by EUAA to predict the large-scale displacement of specific regions and estimate the number of asylum applications in the EU, operates with four primary sources of data: (1) GDELT data, (2) Google Trends, (3) Frontex reporting and (4) its

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[71] Eric Siegel, 'When Does Predictive Technology Become Unethical?' (*Harvard Business Review*, 2020) <https://hbr.org/2020/10/when-does-predictive-technology-become-unethical> accessed 21 April 2023.
[72] IOM, 'Home | Displacement Tracking Matrix' (*IOM)* <https://dtm.iom.int/> accessed 8 April 2023.
[73] Katy Fallon, 'Revealed: EU Border Agency Involved in Hundreds of Refugee Pushbacks' (*The Guardian*, 28 April 2022) <https://www.theguardian.com/global-development/2022/apr/28/revealed-eu-border-agency-involved-in-hundreds-of-refugee-pushbacks> accessed 22 April 2023.
[74] Ozkul (n 12).

only collection of data number of asylum applications and recognition rates per EU member state, as well as, Norway, Switzerland and the UK.

In conclusion, the main issue regarding predictable analytics is its application. Data is already out there and being generated daily in massive quantities; not collecting it and analyzing it would neglect tools to mitigate risks and decrease the readiness of states, regions of the world and entities on how to act.

However, the way it is collected, and its purposes are very different from the potential it may have, especially by considering areas like migration management. Allowing (public or private) entities with law enforcement, defence and security priorities to implement these forecasting analyses and act on their conclusions is dangerous. The combination of knowing what will happen with the need for implementing security and fighting immigration can pose risks for granting the **right to life, liberty and security of the person, non-discrimination, privacy, data protection and the right to seek asylum.** Therefore, the implementation **of predictive analytics should be the mandate of an independent agency at the EU level that prioritizes fundamental rights, bases its analysis on computational social sciences**[75]**, and issues recommendations accordingly that should be followed by the other agencies**. Simultaneously, it should be set rules for when and how these data can be collected and never be neglected personal consent.

1.2.5. The future of migration management technologies

The future of migration management technologies is likely to involve the use of advanced robotics and human augmentation innovations. For example, the US government has recently tested the use of robotic patrol dogs on the Mexican border, prompting outcry from civil rights groups[76]. In the UK, the government has made £2 million available for novel human augmentation innovations to enhance human capability in defence[77]. These examples demonstrate the potential for technology to play

[75] Claudio Cioffi-Revilla, 'Computational Social Science: Computational Social Science' (2010) 2 Wiley Interdisciplinary Reviews: Computational Statistics 259.
[76] Oliver Holmes, 'US Tests of Robotic Patrol Dogs on Mexican Border Prompt Outcry' (*The Guardian*, 4 February 2022) <https://www.theguardian.com/us-news/2022/feb/04/us-tests-of-robotic-patrol-dogs-on-mexican-border-prompt-outcry> accessed 5 July 2023.
[77] Defence and Security Accelerator, '£2 Million Available for Novel Human Augmentation Innovations to Enhance Human Capability in Defence' (*GOV.UK*, 21 April 2023) <https://www.gov.uk/government/news/2-million-available-for-novel-human-augmentation-innovations-to-enhance-human-capability-in-defence> accessed 5 July 2023.

an increasingly significant role in migration management, with the potential to enhance security and efficiency.

1.3. What is the role of new technologies in migration management?

Technology is neither inherently good nor bad. It can evoke as many good solutions as creating problems. Humans are conditioning its applications and replicating social issues such as bias and discrimination, violation of privacy, power imbalances and social hierarchies in its algorithms. Tech has become a way for humans to impose their power, social bias, political agendas and fears on vulnerable people. However, blaming tech for human usage is not understanding the enormous role that it can play in creating a more balanced world.

If tech followed a human rights approach, considering all stakeholders' needs and having concrete legislation to regulate it according to its features, it could be seen greater advances in how migration management is addressed.

Nevertheless, today we are extremely far from this reality, and until we can ensure that tech tools are being developed in the best of non-discriminatory and safety practices, they should not be massively deployed as seen today.

EU member states are promoting a constant push to the development and integration of cutting-edge systems to assist decision-making, prediction and accelerate internal processes in migration; EU institutions regularly deploy tech tools through Frontex and EU information systems; and several new private and research entities have joined the development of dual-use technologies due to the increasing amount of EU funds available.

This recent and interconnected ecosystem for the development of migration management technologies requires a harmony of requirements and standards for implementing and developing these technologies and their fulfilment of human rights requirements.

Therefore, and never replacing the urgent need for legislation, it should be made **mandatory requirement a fundamental rights impact assessment study prior to deployment and after deployment of all tech tools that will interact with humans in**

the migration context. This is the only way to ensure that these tools that massively impact migrants comply with the Union values.

Simultaneously, **an independent EU human rights complying agency should create a quality label for those tools**. Even though they use similar technologies, their applications vary significantly to allow a one-size fits all policy as the only human rights precaution.

Furthermore, there is a need to evaluate the current tools already implemented at all levels to determine if they are in compliance with human rights principles. **This evaluation should either halt the use of such tools until an assessment can be conducted if it is clear that human rights are in jeopardy or conduct the assessment** while still in use to minimize the risk of human rights violations.

To conclude, it can not be turned a blind eye to the massive human rights violations accomplished by implementing these tech tools across the entire migration sector. New technologies can be used to the full extent of human needs; entities must reconsider their priorities and develop tools accordingly. The EU, national governments and other intervenients need to rethink their priorities and work to find a balance between securitization and ensuring borders are safe, and the Union values are not violated.

Chapter 2: EU legislation – Migration, AI, Enterprises and Funds

To best exemplify the topics covered in this chapter, let's look at the following scenario.

Company X developed an AI system with a general purpose. State Z adopted this system for migration management, specifically for its visa-granting system. However, after some time, it was discovered that citizens from State X were being discriminated against, as they were granted visas much less frequently than other nationalities.

Therefore, who becomes responsible for the discrimination towards State X citizens? Company X because their software was faulty, or State Z that adopted this tool without certifying that no violation of fundamental rights could incur?

The challenge in developing and deploying migration management technologies within the EU lies in determining the responsibility when multiple private and public actors are involved. The application of these technologies can lead to irreversible violations of fundamental rights, necessitating their careful consideration prior to deployment. The migration sector carries a high level of risk due to power imbalances involving state authorities, migrants, and private institutions. Addressing these challenges requires a comprehensive approach that includes clear guidelines, accountability mechanisms, and effective oversight to ensure the protection of fundamental rights in the deployment of migration management technologies.

In analyzing EU legislation related to fundamental rights in the context of AI and migration management, the primary legal source is the Charter of Fundamental Rights of the EU[78].

Additionally, sector-specific secondary EU laws, such as data protection[79] and non-discrimination legislation, play a crucial role in safeguarding fundamental rights. Intellectual property law and proprietary considerations are also relevant in AI development and migration management, as they involve protecting the rights of creators and owners of AI systems and ensuring proper regulation of ownership and control. The legal framework should address issues related to intellectual property rights, data sharing, and transparency to balance the protection of rights and access to AI technology for public interest purposes.

The chapter commences with an examination of the migration and asylum policies of the EU to shed light on the allocation of responsibilities within the region. Subsequently, it analyzes the AI Act[80] and its provisions aimed at safeguarding

[78] Charter of Fundamental Rights of the European Union [2000] OJ C364/01

[79] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) [2016] OJ L 119/1

[80] Commission, Proposal for a Regulation Of The European Parliament And Of The Council Laying Down Harmonised Rules On Artificial Intelligence (Artificial Intelligence Act) And Amending Certain Union Legislative Acts COM (2021) 206 final

migrants' fundamental rights. The chapter also covers the proposal for a Directive on corporate sustainability due diligence[81], exploring the mechanisms within this directive that promote sustainable business practices and respect for fundamental rights. Finally, it analyzes the regulations governing the EU-innovation fund Horizon Europe[82] and its predecessors.

The analysis reveals that migration policies in the EU are increasingly adopting a hostile approach, while simultaneously presenting a complex understanding of shared responsibility among EU institutions, agencies, and Member States. On a more positive note, the AI Act and the proposal for a Directive on corporate sustainability due diligence show promising aspirations for enhancing fundamental rights compliance within the EU.

In conclusion, the regulations governing EU funds need to incorporate stronger mechanisms to ensure the protection of fundamental rights in the allocation of funds. Currently, these regulations merely require ethical compliance, which may not be sufficient to address the complex challenges associated with migration management and technology.

In light of these findings, this chapter emphasizes the need for comprehensive and robust regulations that prioritize fundamental rights in migration management.

2.1. Migration and Asylum Policies at the EU [83]

According to the Treaty on the Functioning of the EU[84] (TFEU), the EU:

> Shall ensure the absence of internal border controls for persons' and shall 'frame a common policy on asylum, immigration and external border

[81] Commission, Proposal For A Directive Of The European Parliament And Of The Council On Corporate Sustainability Due Diligence And Amending Directive (EU) 2019/1937 COM(2022) 71 final

[82] Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013 (Text with EEA relevance) [2021] OJ L170/1

[83] Georgiana Sandu, 'Immigration Policy' (*European Parliament*, June 2022) < https://www.europarl.europa.eu/factsheets/en/sheet/152/immigration-policy> accessed 10 May 2023.

[84] Consolidated Version of the Treaty on the Functioning of the European Union (TFEU) [2012] OJ C326/47

control, based on solidarity between Member States, which is fair towards third country nationals[85].

It also:

> Shall develop a common policy on asylum, subsidiary protection and temporary protection to offer appropriate status to any third-country national requiring international protection and ensuring compliance with the principle of nonrefoulement'[86].

And, EU policies in this area 'shall be governed by the principle of solidarity and fair sharing of responsibility, including its financial implications, between the Member States[87].

The Common European Asylum System (CEAS) has evolved, beginning with the establishment of minimum protection standards from 1999 to 2005 and subsequently developing a system of common and uniform protection standards from 2008 to 2013. In 2011, the European Commission issued a communication titled 'Global Approach to Migration and Mobility'[88], which outlines a comprehensive framework for the EU's interactions with third countries concerning migration[89].

The migration crisis in 2015 saw a surge in the number of asylum requests, with a peak of 1.25 million first-time asylum applicants in the EU[90], in that same year. This highlighted the inadequacy of existing asylum policies in ensuring consistent treatment of asylum seekers across the EU. However, there are common standards; national asylum legislations differ in their procedures, recognition rates for asylum applications, and the protection status they provide. Additionally, that system faces challenges in

[85] TFEU OJ C326/47, art 67(2).
[86] TFEU OJ C326/47, art 78(1).
[87] TFEU OJ C326/47, art 80.
[88] Commission, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS The Global Approach to Migration and Mobility COM/2011/0743 final
[89] Ask EP, 'How Does the European Union Regulate Migration?' (*Epthinktank*, 23 June 2021) <https://epthinktank.eu/2021/06/23/how-does-the-european-union-regulate-migration/> accessed 10 May 2023.
[90] European Parliament, 'Migration in Europe | News | European Parliament' (*European Parliament*, 30 June 2017) <https://www.europarl.europa.eu/news/en/headlines/society/20170629STO78632/migration-in-europe> accessed 10 May 2023.

implementing the principle of solidarity and equitable sharing of responsibilities among Member States[91].

In 2016, the Commission introduced a reform package for the CEAS to address its inadequacies. This package aimed to modify the criteria outlined in the Dublin Regulation[92]. It aimed to clarify and streamline the asylum procedures, promote greater convergence of recognition rates and protection forms, revise the standards for the reception of international protection applicants, update the Eurodac asylum fingerprint database, and establish a fully-functional EU Agency for Asylum, as well as a Union Resettlement Framework. Nevertheless, the only proposal adopted into law from this reform package was the 2021 regulation on the EUAA. The agreement failed to obtain sufficient backing from the Member States, thereby stalling the reform process due to persistent disagreements among them on the practical application of the principle of solidarity and the equitable distribution of asylum-related responsibilities.

2.1.1. The New Pact on Migration and Asylum

In September 2020, the Commission put forth a new migration and asylum pact that integrates policies on migration, asylum, integration, and border management in a comprehensive manner[93]. The pact modifies two existing legislative proposals concerning a revised asylum procedures regulation and a revised Eurodac regulation and introduces three novel proposals, namely a regulation on screening third-country nationals at external borders, a regulation on asylum and migration management, and a regulation on crisis and force majeure.

However, The New Pact has been heavily criticized by several sources, from EU agencies to civil society. On a virtual hearing organized by the Social Affairs Section of the European Economic and Social Committee, the panellists focused on three main criticisms: the legislative path, which was underpinned by intergovernmentalism, the dualistic understanding of migrants as either genuine refugees or expellable illegal individuals, and the return sponsorship mechanism, which allows Member States to

[91] 'EU Pact on Migration and Asylum'.
[92] Regulation (EU) No 604/2013 of the European Parliament and of the Council of 26 June 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 (recast) [2013] OJ L180/31
[93] Commission, COMMUNICATION FROM THE COMMISSION on a New Pact on Migration and Asylum COM(2020) 609 final

carry out other countries' expulsion procedures[94]. Simultaneously, the European Economic and Social Committee's Thematic study group on immigration and integration expressed concern about the feasibility of the new solidarity mechanism, which has been described as 'solidarity à la carte'[95].

2.1.2. The EU external dimension of Migration and asylum policies[96]

The Global Approach to Migration and Mobility is the EU's comprehensive framework for external migration and asylum policy, adopted in 2011. It outlines priorities for policy dialogues and cooperation with non-EU countries, aiming to better organize legal migration, prevent and combat illegal migration, maximize the development impact of migration and mobility, and promote international protection.

In March 2016, the European Council and Turkey reached an agreement to reduce irregular migration into Europe via Turkey. The agreement stipulated that new irregular migrants and asylum seekers arriving from Turkey on Greek islands whose asylum applications were deemed inadmissible would be returned to Turkey. For each Syrian returned to Turkey, another Syrian would be resettled in the EU, and Turkey would receive €6 billion under the Facility for Refugees in Turkey. While the EU-Turkey Statement has played a key role in addressing migration in the eastern Mediterranean, Turkey is currently facing increasing migration pressure, and the EU's assistance is crucial. In February 2020, Turkey threatened to suspend the statement, leading to knock-on effects in Greece. In March 2020, Turkey suspended the readmission of returnees from Greek islands due to the pandemic, and the EU is working to persuade Turkey to resume readmission.

The New Pact on Migration and Asylum promotes partnerships with non-EU countries in migration management. The EU-Turkey Statement has been presented as a possible model for future agreements with North African nations, but it raises concerns about compliance with refugee and international human rights laws. The **United**

[94]EESC, 'New EU Pact on Migration and Asylum: A Missed Opportunity for a Much-Needed Fresh Start' (*European Economic and Social Committee*, 30 November 2020) <https://www.eesc.europa.eu/en/news-media/news/new-eu-pact-migration-and-asylum-missed-opportunity-much-needed-fresh-start> accessed 11 May 2023.
[95]EESC 'The New Migration Pact: Fraught with Flaws and Stuck in Limbo' (*European Economic and Social Committee*, 26 May 2021) <https://www.eesc.europa.eu/en/news-media/news/new-migration-pact-fraught-flaws-and-stuck-limbo> accessed 11 May 2023.
[96] Georgiana Sandu, 'Asylum Policy' (*European Parliament*, June 2022)<https://www.europarl.europa.eu/factsheets/en/sheet/152/immigration-policy> accesed 10 May 2023.

Nations has also adopted the New York Declaration for Refugees and Migrants[97], leading to the adoption of two global compacts in 2018 for refugees and other migrants. The **Global Compact on Refugees**[98] affirms the Comprehensive Refugee Response Framework, which aims to ease pressure on host countries, promote refugee self-reliance, improve access to third-country solutions, and improve conditions in countries of origin for safe and dignified returns.

2.1.3. Funding available for asylum and migration policies[99]

AMIF is the primary funding instrument in the EU budget for asylum-related initiatives. The budget for this fund in 2014-2020 rose from €3.31 billion to €6.6 billion due to the migration crisis. For the current period (2020-2027), the EU has increased the Funding of AMIF from its budget to €9.9 billion.

Other funding instruments supporting the integration of refugees and migrants are the European Social Fund, the Fund for European Aid to the Most Deprived and the European Regional Development funds.

In response to the migration crisis, the Funding for the European Asylum Support Office, now the EUAA, was increased from €109 million to €456 million for 2014-2020. The new multiannual financial framework has set a budget of €1.22 billion for the EUAA to provide operational support for asylum procedures from 2021-2027.

The EU budget also allocates funds for external measures, such as the EU Regional Trust Fund, established in 2014 in response to the Syrian crisis, which has activated €2.2 billion. Additionally, the Facility for Refugees in Turkey received €3 billion for 2016-2017 and €3 billion for 2018-2019, has fully committed and contracted both tranches, and disbursed close to €4 billion. The projects under this facility will continue to be funded until at least mid-2025.

2.1.4. 2023 and critical discussions around Migration and Asylum Policies at the EU level

Half a year has passed in 2023, and the influence of migration on EU-related headlines can already be observed across various relevant publications and updates on

[97] New York Declaration for Refugees and Migrants (19 September 2016) UN Doc A/RES/71/1
[98] Global Compact on Refugees (17 December 2018) UN Doc A/RES/73/151
[99] Andres (n 14).

migration discussions. Despite the challenging period for concluding legislative agreements due to the impending EU elections next year, the current environment is exacerbating polarization and shedding light on the realities of border operations, revealing the clear anti-migration stance of certain Member States and EU agencies and institutions.

In May, the New York Times reported to the world a video depicting the Greek Coast Guard placing asylum seekers, including young children, on a raft in the middle of the Mediterranean Sea[100]. When confronted with this shocking video, the Greek conservative prime minister, Kyriakos Mitsotakis, defended his migration policies as 'tough but fair.' Similarly, the European Commission raised concerns about this situation but stated that it was the responsibility of Greek institutions to investigate[101].

Continuing, in June, the Mediterranean Sea witnessed yet another devastating incident. A fishing boat, carrying as many as 750 migrants, sank in the deepest region of the Mediterranean[102]. Tragically, only 104 people managed to survive, while the remaining passengers either perished or were reported as missing. Shortly after the initial reports emerged, conflicting information began to surface. The Greek coast guard claimed that the boat did not require assistance and was in route to Italy at a steady pace. However, a BBC article presenting a timeline of events contradicts this statement[103]. The incident remains under investigation, leaving Europe in shock over the largest catastrophe ever witnessed in the Mediterranean.

In conjunction with these tragic events, the Council has achieved a historic agreement[104]. The agreement aims to implement a more stringent asylum procedure at the border for migrants who are deemed unlikely to be granted asylum. Additionally, it proposes the establishment of a system that grants EU member states the option to

[100] Matina Stevis-Gridneff, Sarah Kerr, Kassie Bracken and Nimet Kirac, 'Greece Says It Doesn't Ditch Migrants at Sea. It Was Caught in the Act.' (*The New York Times*, 19 May 2023) <https://www.nytimes.com/2023/05/19/world/europe/greece-migrants-abandoned.html> accessed 1 July 2023.
[101]Matina Stevis-Gridneff, 'E.U. Asks Greece to Investigate Video Showing Migrants Abandoned at Sea' (*The New York Times*, 22 May 2023) <https://www.nytimes.com/2023/05/22/world/europe/greece-migrants-video-eu-investigation.html> accessed 1 July 2023.
[102] Nick Beake in Kalamata, George Wright & Paul Kirby, 'Greece Boat Disaster: Up to 500 People Still Missing Says UN' (*BBC News*, 16 June 2023) <https://www.bbc.com/news/world-europe-65925558> accessed 1 July 2023.
[103] Nick Beake and Kostas Kallergis'Greece Boat Disaster: BBC Investigation Casts Doubt on Coastguard's Claims' (*BBC News*, 18 June 2023) <https://www.bbc.com/news/world-europe-65942426> accessed 1 July 2023.
[104] 'What's Actually in the EU's Migration Deal?' (n 4).

either accept a specified number of migrants annually or contribute financially to a collective EU fund. This regulation when approved should replace the Dublin regulation[105].

The next phase involves advancing the final negotiations with the European Parliament. However, the Council faces additional discussions following the obstruction caused by Poland and Hungary during the decision-making process of this agreement. In a last-minute decision, both countries opted not to support the agreement, rendering them the only two out of the 27 member states that did not endorse it[106].

While people on the move die in the Mediterranean, the EU works towards strengthening a Fortress Europe.

[105] 'EU Migration and Asylum Policy' (25 June 2023) <https://www.consilium.europa.eu/en/policies/eu-migration-policy/> accessed 1 July 2023.
[106] Jacopo Barigazzi, Suzanne Lynch, Hans Von Der Burchard, Barbara Moens, Clea Caulcutt And Cory Bennett, 'Migration Mutiny: EU Summit Deadlocks' (*POLITICO*, 30 June 2023) <https://www.politico.eu/article/euco-council-eu-viktor-orban-charles-michel-hungary-poland-migration-mutiny-eu-summit-deadlocks/> accessed 1 July 2023.

2.1.5. Summary of Competencies and essential legislation and Frameworks

The 2021 article 'How does the European Union regulate migration?' authored by the Citizens' Enquiries Unit,[107] provides valuable insights into the complex policy ecosystem governing migration management at the European Union. The following Summary illustrates the EU's migration competencies based on this article. It is not intended to be comprehensive but to provide a general overview. It should be considered an update to this table when the reform of the Dublin system is put in place.

AREA	**EU Migration policies**	**Legal migration**	**Integration of migrants**	**Irregular migration**	**Regulations - Reform of the Dublin system**
Responsible entities	EU shares competence on migration and asylum policies with member states	EU measures on legal immigration cover the conditions of entry and residence for specific categories of immigrants	Primarily responsibility of National Governments	Shared responsibility of FRONTEX and Member States.	Proved inefficient with the migration crisis. In 2020, the Commission presented the New Pact on Migration and Asylum.
Relevant updates	2011 – Global approach to migration and mobility - EU's relations with third countries in the field of migration	Essential tools and rules: 1. EU Immigration Portal 2. Highly skilled workers benefit from a blue card scheme	In November 2020, the Commission published an action plan on integration and inclusion in the EU	The EU focus on setting specific measures against human trafficking networks and smugglers and an adequate return policy	In December 2022, the Parliament adopted a resolution calling for a solidarity-based mechanism. June 2023, the Council achieved and agreement.

Figure 2: Summary of Competencies and essential legislation and Frameworks

[107] Ask EP (n 89).

2.1.6. Remarks

The legislative landscape surrounding migration in the EU is highly complex, encompassing multiple jurisdictions that must harmonize to improve migration and asylum policies. However, member states have encountered challenges in reaching a consensus on implementing the principle of solidarity and equitable distribution of responsibilities. This impasse undermines the rights of migrants and hinders international cooperation aimed at strengthening support for them. Nonetheless, 2023 is already proving to be a pivotal year in terms of migration updates within the EU. If the current momentum persists and the replacement of the Dublin Regulation is approved, it is anticipated that the Union will further fortify its stance in creating a more unwelcoming environment for asylum seekers, despite the ongoing disasters in the Mediterranean Sea and ongoing violations of fundamental rights at the borders.

Furthermore, the EU has increased its investments in sectors prioritizing securitization and defence, while concurrently focusing on research and innovation to develop new technologies for managing migration, as discussed in Chapters 3 and 4. The Union has also pursued agreements with third countries to prevent dealing with migrants once they reach EU borders, as exemplified by the EU-Turkey agreement. This approach accentuates border control and the externalization of migration management, rather than comprehensively addressing the needs and rights of migrants.

2.2. AI in Legislation[108]

Although technology has become an integral part of daily tools through constant innovation and research and the automatization of processes, institutions lack regulatory power. To this day, no approved framework regulates the role of AI and its applications in society at the EU level. Nevertheless, it is expected that by the end of 2023, the AI Act will be approved.

Simultaneously, implementing AI systems is intertwined with the market, investment, research, and innovation. AI systems are becoming essential to countries' economies, and the AI era is here to stay. According to the PwC Global Artificial

[108] Commission, Artificial Intelligence Act COM (2021) 206 final

Intelligence Study[109], AI has the potential to contribute $15.7 trillion to the global economy by 2030. With this shift, a new generation of products and services emerged, transforming the job market, improving the efficiency of public services, and impacting crime prevention and the criminal justice system, among others.

Regulating AI is a transversal issue affecting the public and private spheres, the military and law enforcement sectors, multinational enterprises, and suppliers spread across geographic locations responsible for producing or managing each product element. It impacts consumers, business-to-business relationships, business-to-consumer relationships, people in vulnerable situations, children, lawmakers, and even people who do not want to interact with AI. The complexity of regulating AI systems relies on the need to consider all different stakeholders and an unknown future for AI systems.

The European Union has been exploring adopting a human-centric approach to AI that benefits its citizens while upholding EU values and principles as technology develops rapidly. In pursuit of this objective, the European Commission published the **White Paper on Artificial Intelligence**[110], highlighting the necessity for a regulatory and investment-oriented approach. The primary goals of this approach is to promote the uptake of AI and to address the risks associated with certain uses of this new technology. In the document is also mentioned migration and states that it may be needed to adjust AI legislation to ensure and respect fundamental rights in the migration field.

To achieve these objectives, the Commission initially followed a soft-law approach by publishing its non-binding **2019 Ethics Guidelines for Trustworthy AI**[111], which included policy and investment recommendations. However, in 2021, the Commission shifted toward a more legislative approach by publishing the Communication on **Fostering a European Approach to Artificial Intelligence**[112].

[109] PricewaterhouseCoopers, 'PwC's Global Artificial Intelligence Study: Sizing the Prize' (*PwC*) <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html> accessed 6 May 2023.
[110] European Commission, 'White Paper on Artificial Intelligence - A European approach to excellence and trust' COM(2020) 65 final
[111] High-Level Expert Group on AI, 'Ethics Guidelines for Trustworthy AI' (European Commission 2019) https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai.
[112] European Commission, 'Communication on Fostering a European Approach to Artificial Intelligence' COM(2021) 205 final.

Given that the existing legislation protecting fundamental rights and ensuring safety and consumer rights (including data protection and non-discrimination laws) appear insufficient to tackle the risks posed by AI technologies, the Commission proposes the adoption of **harmonized rules for the development, placement on the market, and use of AI systems.** These new rules would complement and be designed following the logic of the existing EU rules on safety products and would be adopted alongside a new Machinery Regulation, aiming to adapt safety rules to a new product generation.

Following the EU debate on AI, the European Parliament urged the Commission to develop an EU framework for AI in its 2017 recommendations on civil law rules on robotics. Subsequently, the Parliament has passed various resolutions on AI. It has issued recommendations for a unified EU approach to AI in areas such as intellectual property, criminal law, education, culture, audiovisual art, and AI's civil and military uses. At the same time, the Council has requested the Commission to propose specific plans for AI.

In April 2021, the Commission introduced a new proposal for an AI Act following the release of the White Paper on Artificial Intelligence.

The primary objective of the proposed AI Act is to ensure the effective functioning of the single market by establishing conditions for the development and utilization of trustworthy AI systems within the European Union. The legislation aims to achieve specific goals, including ensuring the safety and compliance of AI systems in the EU market with existing laws, providing legal certainty to encourage investment and innovation in AI, enhancing governance and enforcement of EU laws on fundamental rights and safety requirements applicable to AI systems, and promoting the growth of a unified market for lawful, safe, and reliable AI applications while preventing market fragmentation. This framework follows a risk-based approach and is intended to serve as a comprehensive EU legislative instrument.

The Council of the EU has adopted a common position in December 2022, modifying several aspects of the Commission's proposal, including the definition, scope, classification, and support for innovation related to AI systems. On the other hand, the IMCO and LIBE committees of the Parliament have adopted a report in May 2023, which significantly amends the Commission's proposal, covering areas such as the

definition, prohibited practices, high-risk systems, general-purpose AI, and governance of AI systems[113].

Regarding migration management technologies, the amendments proposed by the Parliament have been received as a positive development, as they reflect a strong incorporation of civil society's demands for the protection of migrants. Notably, the amendments have resulted in the prohibition of emotion recognition technologies, biometric categorization systems, and predictive policing systems. Furthermore, enhanced safeguards have been introduced to address the potential risks associated with high-risk applications of such technologies[114].

The European Parliament adopted its negotiation position on June 2023 with substantial amendments to the Commission's text[115]. The AI Act is expected to be approved by the end of 2023.

2.2.1. AI Act and migrants' fundamental rights

In order to assess the extent to which the AI Act safeguards the fundamental rights of migrants during the development and deployment of migration management technologies, an analysis must be conducted based on the six high-level core principles outlined in Amendment 213 to the Commission proposal, as established by the European Parliament. These principles encompass (1) human agency and oversight; (2) technical robustness and safety; (3) privacy and data governance; (4) transparency; (5) diversity, non-discrimination, and fairness; and (6) social and environmental well-being.

It is crucial to note that these core principles bear similarity to those already outlined in the Ethics Guidelines for Trustworthy Artificial Intelligence[116] a document prepared by the High-Level Expert Group on Artificial Intelligence in 2019. In addition, the AI Act could be evaluated against other criteria suggested by FRA[117], to determine

[113] European Parliament, 'Artificial Intelligence Act | Legislative Train Schedule' (*European Parliament*) <https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-regulation-on-artificial-intelligence> accessed 9 July 2023.
[114] PICUM, 'PRESS RELEASE - AI Act: European Parliament Endorses Protections against AI in Migration' (*PICUM*, 11 May 2023) <https://picum.org/press-release-ai-act-european-parliament-endorses-protections-against-ai-in-migration/> accessed 2 July 2023.
[115] European Parliament, Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)) P9_TA(2023)0236
[116] HIGH-LEVEL EXPERT GROUP ON ARTIFICIAL INTELLIGENCE, 'ETHICS GUIDELINES FOR TRUSTWORTHY AI'.
[117] 'Getting the Future Right – Artificial Intelligence and Fundamental Rights'.

the extent to which the fundamental rights of migrants are considered. However, it is worth noting that the principles presented by the European Parliament encompass a significant portion of the principles put forth by the FRA. Therefore, the focus should lie on verifying whether the criteria selected by the Parliament adequately address the specific concerns and considerations of the migration and border control sector.

Human agency and oversight:

According to the amendment proposed by the European Parliament, human agency and oversight entail that AI systems should be developed and utilized as tools that serve individuals while respecting their human dignity and personal autonomy. These systems should operate in a manner that can be adequately controlled and overseen by humans.

Article 13 of the AI Act emphasizes transparency and the provision of information to users, stating that high-risk AI systems should be developed in a way that allows humans to interpret the output and use it appropriately. Additionally, Article 14 highlights the importance of human oversight during the use of AI systems. These provisions ensure that human oversight is mandatory for high-risk systems, which includes many technologies deployed for migration management purposes. However, it is necessary to expand this requirement to encompass all systems deployed for migration and border management.

Technical robustness and safety:

According to the amendment proposed by the European Parliament, technical robustness and safety of AI systems mean that these systems should be developed and used in a manner that minimizes unintended and unexpected harm. They should also demonstrate robustness in handling unintended problems and resilience against attempts to alter their use or performance for unlawful purposes by malicious third parties.

The text voted by the Parliament strengthens this principle by introducing a mandatory fundamental rights impact assessment for high-risk AI tools. This assessment ensures that several AI systems deployed for migration and border management undergo thorough analysis before implementation. By conducting this

assessment in advance, it becomes possible to anticipate the potential impacts on fundamental rights, particularly for vulnerable communities like migrants. These risks can be mitigated in advance, and if the potential losses outweigh the benefits, deployment can even be prohibited.

Additionally, forecasting tools that claim to predict people's movements have been added to the high-risk systems category. These tools have the potential to facilitate pushbacks, making it essential to include them in this category. However, specific requirements should be established if these tools are to be deployed by law enforcement entities. As discussed earlier in this chapter, entities such as Frontex and the Greek Coast Guard have been implicated in implementing pushbacks.

Furthermore, surveillance technologies such as drones, thermal imaging cameras, radar sensors, and others have been classified as high-risk systems. This represents a significant step toward ensuring the protection of migrants' fundamental rights. Since 2018, the BVMN and its members have collected 38 testimonies involving 1,076 individuals, which recount the presence of drones prior to illegal pushbacks[118].

Non-remote biometric identification systems have also been categorized as high-risk systems. These systems include handheld devices that scan faces, fingerprints, palms, and employ voice or iris identification technology used by the police to identify individuals and verify their residence status. It is crucial to subject these systems to thorough evaluation prior to deployment, especially when used by law enforcement entities.

Privacy and data governance

According to the amendment made by the European Parliament, AI systems must be developed and utilized in accordance with existing privacy and data protection regulations, while processing data that adheres to high standards of quality and integrity. For instance, providers or deployers of high-risk AI systems are required to ensure the protection of privacy and personal data through measures such as data minimization, anonymization, or pseudonymization.

[118] 'PRESS RELEASE - AI Act: European Parliament Endorses Protections against AI in Migration • PICUM' (n 114).

Furthermore, the amendment stipulates that transparency and explainability are essential for high-risk AI systems. This implies the need to provide clear information regarding the sources of data, methods of processing, and outcomes of the AI system.

Moreover, the text extends the application of GDPR to AI systems covered by the proposed regulation.

Transparency:

According to the amendment proposed by the European Parliament, transparency in AI systems means that these systems should be developed and used in a manner that allows for appropriate traceability and explainability. It is important to make humans aware when they are communicating or interacting with an AI system, and to duly inform users about the capabilities and limitations of the AI system, as well as inform affected persons about their rights.

The proposal put forth by the Commission already included a strong requirement for the creation of a database for high-risk AI systems. This requirement was further reinforced and aligned with the reality of migrants in the text adopted by the Parliament. Specifically, the scope of **Article 60's** publicly viewable database was expanded to include deployments of high-risk AI systems by public authorities. This amendment enhances transparency by providing public visibility into the use of high-risk AI systems by governmental entities.

Diversity, Non-discrimination, and Fairness:

According to the amendment made by the European Parliament, diversity, non-discrimination, and fairness in AI systems entail the development and use of these systems in a way that includes diverse actors and promotes equal access, gender equality, and cultural diversity. Furthermore, it is important to avoid any discriminatory impacts or unfair biases that are prohibited by Union or national law.

Article 10 Data and Data Governance, establishes data governance and management practices for training, validation, and testing data sets. As discussed in Chapter 1 regarding migration management technologies, the lack of quality of data sets

can replicate bias and discrimination, resulting in compromising migrants' fundamental rights that can lead, for example, to unjust deportation of individuals. Therefore, ensuring the quality of data and training AI systems with non-biased data is crucial to prevent the replication of these issues in migration management technologies. By prioritizing data quality and employing unbiased training methods, it becomes possible to mitigate the risks associated with bias and discrimination in AI systems used for migration management purposes.

The most interesting amendment proposed by the Parliament to **Recital 39** in which it is mentioned the Geneva Convention relating to the Status of Refugees. The amendment requires that AI systems used for migration, asylum, and border control purposes must respect the principle of non-refoulement, which is a fundamental principle of international refugee law. This safeguard brings an additional protection under the AI Act for the development of migration management technologies.

Social and Environmental Well-being:

According to the amendment by the European Parliament, social and environmental well-being in relation to AI systems means that these systems should be developed and used in a sustainable and environmentally friendly manner. Furthermore, they should be designed to benefit all human beings while continuously monitoring and assessing their long-term impacts on individuals, society, and democracy.

To ensure the protection of migrants' fundamental rights, the AI Act includes a ban on several systems that were previously analyzed in Chapter 1, thereby establishing stronger safeguards against their long-term impact. **Article 5** of the AI Act ammended by the Parliament, prohibits the following systems:

1) Emotion recognition technologies
2) Biometric categorization systems
3) Predictive policing systems that rely on preconceived notions about individuals or groups to make policing decisions.

In addition, the text approved by the Parliament extends the coverage of the AI Act to the EU's large-scale databases. This amendment is highly significant as it ensures that the biometric and biographic data collected on a massive scale for immigration and

law enforcement purposes is protected and regulated by this Act. However, as discussed in Chapter 1, the EU aims to establish interoperability among these databases, which entails integrating the personal data of third-country nationals with judicial and criminal systems. This integration poses significant risks and is considered highly dangerous. Therefore, the proposed 4-year timeline for EU migration databases to comply with the AI Act should be amended to a shorter period, allowing eu-LISA to act promptly in ensuring data protection and compliance with the Act.

Furthermore, the approved version of the Parliament's amendment modifies the fines that can be imposed under the AI Act. It also specifies that the penalties, along with associated litigation costs and indemnification claims, should not be subject to contractual clauses or burden-sharing agreements between providers, distributors, importers, deployers, or any other third parties. This provision ensures that accountability for the implementation of migration management technologies cannot be evaded or passed on to different parties, thereby acknowledging the full extent of their impacts.

In parallel, the Parliament introduced a new chapter in the Act to provide remedies for affected individuals in case of potential violations of the rules under the AI Act. This chapter enables affected persons, including migrants, to file complaints with a supervisory authority, although the effectiveness of this provision in upholding migrants' fundamental rights remains to be seen. Nonetheless, it creates a space for individuals who may have suffered harm due to AI systems to seek redress.

2.2.2. Remarks

The updates and their impact on safeguarding migrants' fundamental rights in the document approved by the European Parliament are truly remarkable. The requests put forth by civil society organizations to uphold the fundamental rights of migrants have been given significant consideration, resulting in a document that signifies significant progress for the values of the European Union, surpassing the initial proposal presented by the European Commission. While certain updates are still required to address legislative loopholes and the convergence of various requirements[119], this document is considerably stronger and provides a solid foundation for further

[119] EDRi, 'EU Parliament Sends a Global Message to Protect Human Rights from AI' (*European Digital Rights (EDRi)*) <https://edri.org/our-work/eu-parliament-committee-vote-strong-message-protecting-fundamental-rights-from-ai-systems/> accessed 4 July 2023.

discussions during the trilogue process. It is expected that the final approved document will closely resemble the version currently under review and will likely be finalized by the end of 2023. However, given the rapid advancements in AI technology, it is crucial to acknowledge the possibility of future amendments being necessary to adequately safeguard the fundamental rights of migrants under EU law.

2.2.3. International Initiatives on AI

The UN has developed frameworks to address the ethical, social, and security implications of artificial intelligence. The **UNESCO Recommendation on the Ethics of Artificial Intelligence provides guidance on ethical principles**[120], but it does not specifically address AI in migration. The UN Group of Governmental Experts on AI in the Context of International Security examines the impact of AI on security and develops recommendations. UN agencies like UNHCR[121] work on AI projects for sustainable development. While these initiatives highlight the UN's recognition of AI's importance, there is no ongoing treaty specifically focused on AI at present.

Simultaneously, other national and regional agreements and frameworks on AI should be mentioned.

On the international stage and as the first international standard, the OECD adopted 2019 a non-binding Recommendation on AI[122] called '**The OECD Artificial Intelligence (AI) Principles**'. Also, the **Council of Europe** is drafting a legally binding treaty focused on AI[123] that should be adopted by 2023.

While some progress has been made, the focus for a long time has been on non-binding frameworks, resulting in the development of AI systems with minimal regulations and reliance on the assumption that ethical principles alone would ensure compliance with fundamental rights. This neglect has allowed the AI ecosystem and its stakeholders to operate without sufficient pressure to consider the full extent of these rights during development. Presently, AI has expanded into diverse fields with various applications, and the number of stakeholders involved has increased significantly. Consequently, developing and deploying AI systems require regulations that promote

[120] UNESCO, 'Recommendation on the Ethics of Artificial Intelligence' (2022) SHS/BIO/PI/2021/1.
[121] 'United Nations High Commissioner for Refugees (UNHCR)' (*AI for Good*) <https://aiforgood.itu.int/about-ai-for-good/un-ai-actions/unhcr/> accessed 9 July 2023.
[122] OECD, 'Recommendation of the Council on Artificial Intelligence' (2019) C/MIN(2019)3/FINAL
[123]Committee On Artificial Intelligence, Revised Zero Draft [Framework] Convention On Artificial Intelligence, Human Rights, Democracy And The Rule Of Law (2023) CAI(2023)01

accountability, transparency, and the shared responsibility of upholding human rights obligations.

Nevertheless, the Council of Europe is taking the lead and its convention on AI is expected to be adopted until the end of 2023. It is hoped that adopting the AI Act will inspire the rest of the world to pursue stricter AI regulations and strike a balance between innovation, progress, and human rights obligations.

2.3. Regulating enterprises

In addition to the global technological transformation, it is evident that power is no longer solely concentrated within states, as discussed earlier. The processes of globalization and extraterritoriality have enabled multinational companies to expand their operations in unprecedented ways. These companies now operate across multiple countries, sourcing materials and services from diverse regions and establishing production and operational centres spanning from the global North to the global South, all based on their specific needs and strategic objectives.

In the realm of migration management, private entities play various roles, ranging from delegating certain migration management phases to these entities, developing technologies that facilitate processes, and even managing facilities that host migrants, among other responsibilities[124].

2.3.2. Proposal for a Directive on corporate sustainability due diligence

On February 23rd, 2022, the European Commission introduced a **proposal for a Directive on corporate sustainability due diligence**[125]. This Directive aims to promote sustainable and responsible corporate practices and embed human rights and environmental considerations into companies' operations and corporate governance. The proposed rules will require businesses to address the negative impacts of their actions, both within and outside of Europe, including in their value chains.

[124] Tendayi Bloom, 'The Business of Migration Control: Delegating Migration Control Functions to Private Actors' (2015) 6 Global Policy 151.
[125] European Commission, Directive on Corporate Sustainability Due Diligence COM(2022) 71 final

The proposal has raised concerns regarding potential double standards[126] between the standardized obligations imposed on companies within this proposal and the commitments outlined in the European Commission's policy paper on Trade and Sustainable Development. Examining how the EU will incorporate these commitments into its bilateral free trade agreements is crucial, as inconsistencies could undermine the overall effectiveness and coherence of the EU's sustainability efforts.

Nevertheless, this proposal demonstrates the Union's concern about holding companies accountable for their actions while operating within the Single Market. It also aims to harmonize legislation on mandatory due diligence among member states, introducing a layer of reporting and accountability for human rights issues. By increasing knowledge about how companies operate, this Directive has the potential to enhance transparency and positively influence companies' adherence to human rights obligations.

On June 1, 2023, the European Parliament voted on the directive on corporate due diligence, adopting amendments to the proposal. The next step for the directive on corporate due diligence is for the European Parliament, the Council of the European Union, and the European Commission to reconcile their respective versions of the directive in a process known as trilogue negotiations.

As indicated previously, there is a growing involvement of private entities in the migration sector. Consequently, implementing legislation that holds these entities accountable can contribute to creating a safer environment for individuals affected by their actions. However, this process will require time, and further analysis will be necessary once Member States transpose the directive into national law. The amendments made by the Parliament have yielded several key conclusions that uphold fundamental rights:

Recital 1: The directive is founded on the principles of human dignity, freedom, democracy, equality, the rule of law, and human rights, as enshrined in the EU Charter of Fundamental Rights and the Treaty on the European Union.

[126] 'The EU's Inconsistent Approach towards Sustainability Treaties: Due Diligence Legislation v. Trade Policy' (*EJIL: Talk!*, 9 November 2022) <https://www.ejiltalk.org/the-eus-inconsistent-approach-towards-sustainability-treaties-due-diligence-legislation-v-trade-policy/> accessed 20 May 2023.

Recital 12: The directive aligns with the EU Action Plan on Human Rights and Democracy 2020-2024[127], which prioritizes strengthening the Union's commitment to promoting the global implementation of the United Nations Guiding Principles on Business and Human Rights, along with other relevant international guidelines.

Recitals 6 and 13: The directive mandates companies to conduct due diligence according to internationally recognized standards and frameworks, such as the OECD Guidelines for Multinational Enterprises, the OECD Guidance on Responsible Business Conduct, and the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy.

Recital 13 and Article 19: The directive establishes civil liability for companies that cause or contribute to harm due to their failure to carry out due diligence. It also ensures access to justice and legal remedies for victims of human rights abuses and environmental harm resulting from corporate activities.

Article 8: The directive introduces a notification procedure for stakeholders, including civil society organizations, trade unions, workers' representatives, and individuals affected or likely to be affected by adverse impacts. These stakeholders can inform companies about such impacts and request appropriate action to address them.

2.3.3. International Initiatives

The **United Nations Guiding Principles on Business and Human Rights[128]** endorsed by the UN Human Rights Council in 2011, is a framework comprising 31 principles that aim to implement the 'Protect, Respect, and Remedy' framework regarding human rights and business enterprises. These principles serve as a non-binding international framework for holding companies accountable for their actions.

The **OECD Guidelines for Multinational Enterprises**[129] re government-endorsed recommendations that promote responsible business conduct and sustainable

[127] European Commission, JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL EU Action Plan on Human Rights and Democracy 2020-2024 (2020) JOIN(2020) 5 final
[128] United Nations Human Rights Office of the High Commissioner, 'Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework' (2011) HR/PUB/11/04
[129] OECD, 'OECD Guidelines for Multinational Enterprises' (2011) https://doi.org/10.1787/9789264115415-en

development. The **OECD Due Diligence Guidance for Responsible Business Conduct**[130] provides practical assistance to enterprises in implementing these guidelines. By adhering to these recommendations, companies can effectively prevent and address adverse impacts related to workers, human rights, the environment, bribery, consumers, and corporate governance in their operations and supply chains.

Regulating enterprises is crucial to address their significant power while considering their role in maintaining competitiveness and innovation. It is important to develop regulations through dialogue, balancing the needs of enterprises with the protection of fundamental rights.

The proposal for a Directive on corporate sustainability due diligence is a significant step towards fulfilling fundamental rights obligations. If approved, it would be a milestone in European and global legislation, similar to the impact of the General Data Protection Regulation and the AI Act. By combining the Directive with existing international frameworks, it has the potential to set an international precedent for responsible business practices.

2.4. EU-funds for Research and Innovation

The Framework Programmes for Research and Technological Development, commonly known as Framework Programmes or abbreviated as FP1 to FP9, have been instrumental funding initiatives established by the European Union to support and promote research within the European Research Area. These programmes were initiated in 1984 and have continued to evolve. The most recent programme, Horizon Europe, has been allocated a substantial budget of €95.5 billion to be allocated over seven years.

The Framework Programmes for Research and Technological Development, including FP7 (2007-2013), Horizon 2020 (2014-2020)[131], and Horizon Europe (2021-2027)[132], have been pivotal in promoting research and innovation within the European

[130] OECD, 'OECD Due Diligence Guidance for Responsible Business Conduct' (2018)
[131] REGULATION (EU) No 1291/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC [2013] OJ L347/104.
[132] Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013 (Text with EEA relevance) [2021] OJ L170/1

Research Area. These funding initiatives have provided significant financial support, with budgets of €50.5 billion, €77 billion, and €95.5 billion, respectively.

While each funding period has had distinct objectives and actions, FP6 and FP7 primarily focused on technological research, while Horizon 2020 shifted towards innovation, aiming to drive economic growth and deliver practical solutions to end-users, including governmental agencies. Horizon Europe represents a new phase of research funding and collaboration, promising further advancements in various fields of study.

The Framework Programmes have encompassed various fields, including migration management technologies, which have raised concerns about fundamental rights compliance. Under Horizon 2020, applicants must adhere to ethical principles outlined in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. These principles emphasized respecting human dignity, protecting human rights, and adhering to ethical standards in research activities.

Additionally, Horizon 2020 embraced Responsible Research and Innovation, emphasizing societal considerations, public engagement, gender equality, and ethics throughout the research process. This approach aimed to ensure that research outcomes addressed societal needs while upholding fundamental rights and societal values. It will be further developed on Chapter 3.

Similar provisions for protecting fundamental rights and ethical considerations were maintained and strengthened under Horizon Europe[133]. The programme supports projects prioritizing responsible research and innovation, incorporating ethical and legal dimensions into funded research activities.

However, ethical requirements are the only mechanisms in its regulations to ensure compliance with fundamental rights. Ethical requirements alone are insufficient to ensure fundamental rights compliance in projects. Implementing fundamental rights

[133] Directorate-General for Research and Innovation (European Commission), *Horizon Europe, Open Science: Early Knowledge and Data Sharing, and Open Collaboration* (Publications Office of the European Union 2021) <https://data.europa.eu/doi/10.2777/18252> accessed 20 May 2023.

impact assessments is crucial, particularly in fields like migration management, a research topic foreseen in cluster 3 of Horizon Europe[134].

Furthermore, the Framework Programmes actively foster collaborations with third countries outside the EU, acknowledging the importance of global cooperation in advancing research and innovation. While these collaborations are encouraged through bilateral and multilateral agreements, questions arise regarding how these countries ensure and comply with fundamental rights. The EU has established various agreements outlining participation, funding, and knowledge-sharing terms[135]. However, the absence of standardized approaches to partnerships raises concerns about guaranteeing that these countries uphold fundamental rights in their participation.

It is evident that these frameworks currently lack comprehensive mechanisms to ensure fundamental rights throughout project development. This highlights the need to address the different bilateral and multilateral agreements that accommodate third countries in research and development without necessarily ensuring consistent fundamental rights standards.

2.5. Conclusions

This chapter concludes with the acknowledgment that there are numerous uncertainties surrounding legislation aimed at ensuring compliance with fundamental rights in the migration management sector, particularly when introducing new technologies. Currently, two key proposals are pending that have the potential to reshape the respect for fundamental rights and accountability within the EU: the proposal on the AI Act and the proposal for a Directive on corporate sustainability due diligence. It is expected that by the next European elections in 2024, the outcomes of these proposals will become apparent.

Migration competences are shared between Member States and the EU, creating an ecosystem that fosters uncertainty, lacks transparency, and poses challenges for

[134] European Commission 'Cluster 3: Civil Security for Society' (*European Commission)* <https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/cluster-3-civil-security-society_en> accessed 20 May 2023.
[135] European Commission, 'European Partnerships in Horizon Europe' (*European Commission*, 1 September 2022) <https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en> accessed 20 May 2023.

accountability. Simultaneously, the Union's focus on securitization and diminished solidarity jeopardizes the rights of migrants, despite increasing investments in this sector. The externalization of borders and the reliance on agreements with third countries to manage migration are practices that the EU should not be conducting.

Technology is extensively utilized at all stages of migration, but it has also been associated with fundamental rights violations. A major concern is the growing number of stakeholders involved, making it challenging to track interactions and responsibilities. However, the proposal for the AI Act introduces a risk-based approach to regulate the use of artificial intelligence in migration management. It is crucial that any technology used for migration purposes, regardless of whether it is developed and deployed by Member States, private entities, or EU agencies, is considered a high-risk system.

In terms of businesses, the proposal for a Directive on corporate sustainability due diligence holds significant potential for promoting informed decision-making and ensuring the protection of fundamental rights in business activities.

Furthermore, EU funds allocated for innovation and research require stronger regulations to ensure compliance with fundamental rights standards. Ethical requirements alone are insufficient when projects are implemented in high-risk sectors such as migration.

In conclusion, there is an expectation for legislative progress in the coming months that will reshape current practices. However, a crucial provision that should be incorporated into all these proposals is the mandatory requirement for a human rights impact assessment before and after the deployment of systems affecting migration management. This is the only way to ensure that rights are respected, and violations are prevented.

Hostile migration policies should not be reinforced using technology in vulnerable communities like migrants. Before engaging in actions that may lead to violations, it is essential to ensure that all necessary precautions have been taken. Only then can we assess whether technologies are truly improving migration management in specific sectors. This is an opportune time to legislate what is permissible and to never disregard the significance of fundamental rights impact assessments as tools to provide objective information.

Chapter 3: EU Funds and border technology projects' Analysis

Societies are increasingly reliant on technology, and technological advancements are often seen as indicators of a country's progress and development. By implementing state-of-the-art technologies to manage various public and private services, states aim to create more just and fair systems by reducing human involvement in decision-making processes, shorten time of service delivery and decrease budgetary spendings.

However, it is important to recognize that data quality and algorithms have the potential to replicate existing power structures within societies. The collection of data is susceptible to bias, measurement errors, and the underrepresentation of certain communities[136]. When applied to the field of migration, where there is a clear power imbalance between migrants and migration management officials, technology can inadvertently perpetuate unfair treatment despite countries' claims to the contrary. Stricter migration policies often prioritize security practices over human rights considerations.

In the European Union and its external borders, the Commission has emphasized the need to enhance border security by leveraging IT systems and technologies[137]. This focus on state-of-the-art security technologies is part of a broader agenda outlined in the Agenda for Security, which recognizes that research and innovation are crucial to meet evolving security needs[138]. Consequently, there has been a consistent expansion of security research efforts within the EU's Research Framework Programmes, including FP7, Horizon 2020, and Horizon Europe.

By compiling the analysis done by Statewatch[139] for FP7 and Horizon 2020 and my own analysis for the first call of Horizon Europe, it was possible to identify and analyse 68 projects and a total of just over €421 million invested in projects applied to migration management technologies.

Examples of these projects are AMASS, TALOS, OPARUS, SEABILLA, PERSEUS, ROBORDER, I2C, and iBorderCtrl, and aim to develop security

[136] European Union Agency for Fundamental Rights. (n 52).
[137] European Commission, 'Communication from the Commission the European Parliament, the Council and the European Economic and Social Committee. A European Agenda on Migration. COM 2015(240).

[138] European Commission, 'Communication from the Commission the European Parliament, the Council and the European Economic and Social Committee. The European Agenda on Security' COM 2015(185).

[139] Kilpatrick and Jones (n 15).

technologies to improve the EU's surveillance capabilities at its external borders and enhance border security and control. However, these projects have faced controversy within the EU, as some of them have been perceived as conflicting with the Union's core values, despite receiving R&D funding[140].

To comprehend the ecosystem of EU funding for the development of migration management technologies and assess the ethical safeguards in place, this chapter provides an overview of EU funds allocated to migration. It then delves into the analysis of projects related to the development of migration management technologies under the Research Framework Programmes. This analysis examines trends in projects based on the different types of technologies identified in Chapter 1. Additionally, the chapter evaluates the level of transparency with civil society by assessing the consistency of documents made available online by the consortiums and the European Commission. Lastly, the chapter highlights the gap between regulatory requirements and actual disclosure of ethical standards and reports.

Based on these findings, recommendations are proposed to bridge the identified gaps and ensure that projects involving vulnerable communities implement fundamental rights impact assessment, as a legal requirement prior and after deployment. Ethics standards, the only safeguard in EU regulations of funds to promote safe practices for innovation, are not enough to safeguard the fundamental rights of these communities. Moreover, when projects pose risks to these rights and may face termination by the Commission, it is crucial to proactively disclose this information to the public rather than relying on the media, researchers, or policymakers to identify such risks. Transparency and accountability should be ensured in projects funded by public funds, without compromising ethical considerations already foreseen in the regulations.

3.1. EU funds available that impact migration management and border control

Since the emergence of the migration crisis and as evidenced in Chapter 2, legislation pertaining to migration within the European Union has grown increasingly intricate. There is a convergence of competencies between the EU and its Member

[140] Daniel Leufer and Fieke Jansen 'The EU Is Funding Dystopian Artificial Intelligence Projects' (E*uractiv*, 22 January 2020) <www.euractiv.com/section/digital/opinion/the-eu-is-funding-dystopian-artificial-intelligence-projects/> accessed 7 July 2023.

States, resulting in overlapping and indistinct jurisdictional boundaries[141]. Furthermore, the interplay between migration and securitization has become inseparable. Nonetheless, the efficacy of migration policies is contingent upon the level of investment in the sector. Notably, the EU has witnessed a substantial increase in investment dedicated to migration, with billions of euros allocated annually to various institutions, research, and innovation endeavours, and even agreements with third countries aimed at curtailing the arrival of migrants at the EU's external borders[142].

The subsequent table provides a concise summary of the pertinent funds that impact migration at the EU level. These funds encompass research and innovation initiatives that promote the development of migration management technologies, direct allocations for migration and border management purposes, defence funds earmarked for innovation that affect border management, and agreements forged with third countries.

[141] 'How Does the European Union Regulate Migration?' (n 89).
[142] Statewatch & Transnational Institute (n 9).

Name of the Fund	Year	Total Amount (Euro)	Goal
Horizon Europe[143]	2021-2027	€95.5 Billion Preceded by: F7 (2007-2013): €50 Billion[144] Horizon 2020 (2014-2020)[145]: €80 Billion	Horizon Europe is the EU's key funding programme for research and innovation. The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports creating and better dispersing of excellent knowledge and technologies. Pillar 3 of Horizon Europe is called Civil Security for Society and cover law enforcement and border management projects.
Asylum, Migration and Integration Fund[146]	2021-2027	€9.88 Billion	AMIF will contribute to the achievement of four specific objectives: 1) to strengthen and develop all aspects of the common European asylum system, including its external dimension 2) to support legal migration to the Member States, and the integration of third-country nationals 3) countering irregular migration and ensuring effectiveness of return and readmission in third countries 4) to enhance solidarity and responsibility sharing between the Member States, in particular towards those most affected by migration and asylum challenges

[143] European Commission 'Horizon Europe' (*European Commission*, 19 April 2023) <https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en> accessed 20 May 2023.
[144] European Commission ' Commission presents its evaluation of the 7th Framework Programme for Research' (FactSheets) MEMO_16_146.
[145] European Commission, 'Horizon 2020' (*European Commission*, 29 May 2017) <https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/shaping-eu-research-and-innovation-policy/evaluation-impact-assessment-and-monitoring/horizon-2020_en> accessed 20 May 2023.
[146]European Commission, 'Asylum, Migration and Integration Fund (2021-2027)' (*European Commission)* <https://home-affairs.ec.europa.eu/funding/asylum-migration-and-integration-funds/asylum-migration-and-integration-fund-2021-2027_en> accessed 24 April 2023.

European Defence Fund (EDF)[147]	2021-2027	€8 Billion Preceded by: 1. PADR 2014-2020[148]: €90 Millions 2. EDIDP 2019-2020[149]: €500 Millions	The fund promotes cooperation among companies and research actors of all sizes and geographic origin in the Union, in research and development of state-of-the-art and interoperable defence technology and equipment.
Integrated border management funds (IBMF)[150]	2021-2027	€7,37 Billion	The Integrated Border Management Fund comprises two components: the Border Management and Visa Instrument (BMVI) and the Customs Control Equipment Instrument (CCEI). The Integrated Border Management Fund's BMVI component seeks to enhance border management and visa policies, while the CCEI component focuses on providing financial support for modern customs control equipment to improve customs controls at the European Union's borders.
Internal Security Fund (ISF)[151]	2021-2027	€ 1.93 Billion	The ISF will contribute in particular to: increasing the exchange of information between EU law enforcement authorities and enhancing cooperation and cross border operations, cross-border cooperation via intensifying cross-border joint operations, fight against crime via strengthening capabilities to combat and prevent crime and reinforcing protection against terrorism, organized crime and cybercrime
Neighbourhood, Development and International	2021-2027	€79,5 Billion	NDICI stresses the importance of building comprehensive, mutually beneficial partnerships with third countries on migration in line with the priorities for external cooperation. It addresses migration through introducing a spending target of 10% of the NDICI to be dedicated to "addressing

[147] European Commission, 'The European Defence Fund (EDF)' (*European Commission)* <https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-fund-edf_en> accessed 28 May 2023.
[148] European Commission, 'Preparatory Action on Defence Research (PADR)' (*European Commission)* <https://defence-industry-space.ec.europa.eu/eu-defence-industry/preparatory-action-defence-research-padr_en> accessed 31 May 2023.
[149] European Commission, 'European Defence Industrial Development Programme (EDIDP)' (*European Commission)* <https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-industrial-development-programme-edidp_en> accessed 31 May 2023.
[150] European Commission, 'Integrated Border Management Fund'(*European Commission)* <https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/integrated-border-management-fund_en> accessed 28 May 2023.
[151] European Commission, 'Internal Security Fund (2021-2027)' (*European Commission)* <https://home-affairs.ec.europa.eu/funding/internal-security-funds/internal-security-fund-2021-2027_en> accessed 28 May 2023.

Cooperation Instrument (NDICI)[152]			the root causes of irregular migration and forced displacement and to supporting migration management and governance including the protection of refugees and migrants' rights[153]
European Union Emergency Trust Fund for Africa - EUTF Africa[154]	2015-2021	€5 Billion (in which €4,4 Billion are from European Development Fund)	The European Union Emergency Trust Fund for stability and addressing root causes of irregular migration and displaced persons in Africa (EUTF for Africa) was created to address the root causes of instability, forced displacement and irregular migration and to contribute to better migration management.
Facility for Refugees in Turkey (FRT)[155]	2016-2023 (for projects running until 2025)	2016-2017: € 3 billion 2018-2019 € 3 billion 2021-2023 € 3 billion	European Council and Turkey reached an agreement to reduce irregular migration into Europe via Turkey. The agreement stipulated that new irregular migrants and asylum seekers arriving from Turkey on Greek islands whose asylum applications were deemed inadmissible would be returned to Turkey. This fund was set up to assist Turkey with supporting and integrating these refugees
EU regional Trust Fund for Syria - Madad (EUTF Syria - Madad)[156]	2014-2021 The program will continue through Global Europe (NDICI)	€2,38 Billion	EUTF Syria - Madad was put in place by the EU in response to the Syrian Crisis it contributes to address the critical needs of 5.6 million Syrian refugees, their host communities and 6.7 million persons displaced in their own country

Figure 3: EU funds available that impact migration management and border control

[152] European Commission, 'Neighbourhood, Development and International Cooperation Instrument – Global Europe (NDICI – Global Europe)' (*European Commission)* <https://neighbourhood-enlargement.ec.europa.eu/funding-and-technical-assistance/neighbourhood-development-and-international-cooperation-instrument-global-europe-ndici-global-europe_en> accessed 28 May 2023.
[153] European Commission, 'Recommendations on the NDICI Migration Spending Target'(*Cordis)* <https://concordeurope.org/resource/recommendations-on-the-ndici-migration-spending-target/> accessed 28 May 2023.
[154] European Commission, 'Emergency Trust Fund for Africa' (*European Commission)* <https://trust-fund-for-africa.europa.eu/index_en> accessed 28 May 2023.
[155] European Commission, 'EU Support to Refugees in Türkiye' (*European Commission)* <https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/turkiye/eu-support-refugees-turkiye_en> accessed 28 May 2023.
[156] European Commission, 'EU Regional Trust Fund in Response to the Syrian Crisis' (*European Commission)* <https://trustfund-syria-region.ec.europa.eu/index_en> accessed 28 May 2023.

Excessive amounts of money, as indicated above, invested in the migration sector without proper supervision and mechanisms to ensure compliance with fundamental rights, can lead to severe violations. When determining priorities in the allocation of these funds, those responsible for the funds and those who interact with them in any capacity must be aware of potential outcomes that may arise from their utilization. At the same time, transparency should not be disregarded.

In Chapter 3, the analysis will primarily centre around the research and innovation funds, namely Horizon Europe, Horizon 2020, and FP7. As discussed in Chapter 2, these funds only consider ethical requirements as a means of holding stakeholders accountable. However, these requirements are insufficient to ensure the protection of migrants' fundamental rights, and adjustments should be made to include the necessity of conducting fundamental rights impact assessments for research that may have interactions with these communities. Following, Chapter 4 will also focus on European Defence Fund and its predecessors, PADR and IDIDP to be able to understand the overlap of private entities in projects approved under both frameworks.

Nonetheless, in order to comprehensively address migration within the EU, the utilization of all these funds should be examined. They exhibit an intricate interconnectedness that provides a broader understanding of security, innovation for border management, and the EU's lack of accountability when delegating the management of migrants to third countries, despite their clear intent to reach EU borders. Together, they demonstrate the practical implementation of ambiguous policies.

3.2. Project analysis: from practical examples to ethical regulations

This section focuses on the practical implementation of EU-funded Research Frameworks in the field of Migration Management. It provides a comprehensive summary of the projects carried out within these frameworks and highlights the potential disclosure and ethical gaps in reports financed with public funds.

Projects approved under FP7, Horizon 2020 and Horizon Europe concerning migration management technologies.

In Chapter 1, the definition and functioning of migration management technologies were outlined. Practical examples of their deployment in Europe and

worldwide were provided, highlighting the involvement of regional agencies, national governments, private entities, and local NGOs. In this chapter, the focus will be on initiatives conducted and developed under FP7, Horizon 2020 and Horizon Europe. It will also be highlighted which rights can be violated by the implementation of these kinds of technologies. The goal is that by showing the real projects that the Commission has been approving, it can be understood the full length of how innovation is leading to the compromise of migrants' rights in the EU. Innovation can not be the justification for masking political goals and promote power imbalances. By doing so, it compromises the public trust in tools that can have good applications and help turn the process simpler and more efficient. Nevertheless, this will never be accomplished while the needs of these communities are entirely neglected.

The presented projects are not exhaustive in nature. A deliberate selection was made to illustrate the implementation of each technology. Consideration was given to the projects' level of innovation, whether they involved controversial practices, and the extent of investment by the European Commission.

An important point to note is that the upcoming call for Effective Management of EU External Borders projects under Horizon Europe is open until November 2023. The call is focused on four specific topics: Border Surveillance, Beyond Biometrics, Supply Chains, and Interoperability of Systems[157]. Projects submitted should align with these thematic areas. After the proposed amendments to the AI Act by the European Parliament, it will be intriguing to analyze the projects that emerge from this call and assess their alignment with the AI Act.

Automated biometric systems

ABC gates, although not officially classified as AI systems by the Commission, have been recognized as such in a report commissioned by Frontex and produced by RAND[158]. This report acknowledges the presence of AI applications in ABC gates, encompassing functions like biometric scanning, facial recognition, and document authenticity validation.

[157] 'Effective Management of EU External Borders' <https://rea.ec.europa.eu/funding-and-grants/horizon-europe-cluster-3-civil-security-society/effective-management-eu-external-borders_en> accessed 7 July 2023.
[158] RAND Europe, 'Artificial Intelligence-Based Capabilities for the European Border and Coast Guard; final report' (March 2021).

In the EU, ABC gates are increasingly becoming the standard practice. The FP7-funded project called ABC4EU assessed pilot projects and identified key issues such as harmonizing e-passport management, biometrics, and system interoperability[159]. IDEMIA, a self-proclaimed global leader in augmented identity, has developed ID2Travel, which extends biometric identity checks to both check-in and border control processes[160].

This type of technology continues to be present under Horizon Europe through the ODYSSEUS project. ODYSSEUS aims to facilitate seamless border crossings for citizens, while reducing the workload and enhancing productivity for Border Guard Authorities through detailed risk analysis[161].

Automated risk assessments and decision-making

Automated risk assessment tools have played a significant role in migration management, particularly in the context of visa issuance. Under the Horizon 2020 framework, the noteworthy project FOLDOUT project aimed to enhance border surveillance at the EU's external borders by utilizing a fusion of information from multiple sensors, including both ground-based and airborne sensors. Then, by combining data from various sensors to provide a comprehensive threat assessment and propose reaction scenario. The project specifically focused on enabling 'through-foliage' surveillance to detect illegal cross-border activities[162]. This initiative builds upon a previous effort by Frontex, which commissioned a study on 'under-foliage detection' in 2014.[163] This shows the connection between Horizon approved projects and Frontex.

[159] European Commission, 'ABC GATES FOR EUROPE | ABC4EU Project | Fact Sheet | FP7' (*CORDIS | European Commission*) <https://cordis.europa.eu/project/id/312797> accessed 9 July 2023.
[160] IDEMIA, 'ID2Travel' (*IDEMIA*, 14 October 2020) <https://www.idemia.com/id2travel> accessed 9 July 2023.
[161] European Commission, 'PREVENTING, COUNTERING, AND INVESTIGATING TERRORIST ATTACKS THROUGH PROGNOSTIC, DETECTION, AND FORENSIC MECHANISMS FOR EXPLOSIVE PRECURSORS | ODYSSEUS | Project | Fact Sheet | H2020 | CORDIS | European Commission' (*CORDIS | European Commission*) <https://cordis.europa.eu/project/id/101021857> accessed 9 July 2023.
[162] Foldout Consortium, 'Foldout Solution' (*Foldout)* <https://foldout.eu/> accessed 9 July 2023.
[163] Statewatch, 'Seeing through trees: Frontex commissions study on "solutions for under-foliage detection"', Statewatch (*Statewatch*, 17 February 2014), <https://www.statewatch.org/news/2014/february/seeing-through-trees-frontex-commissions-study-on-solutions-for-under-foliage-detection/ > accessed 9 July 2023.

Recently approved under Horizon Europe, FLEXI-cross aims at enhancing the security and efficiency of EU border checks for people and goods through the development and implementation of innovative border-checking solutions. These solutions encompass predictive risk assessment for combating trafficking and smuggling, portable biometric-based checks to bolster security, real-time multi-source cross-referencing for secure person verification, ad-hoc deployment of Border Check Points, secure data exchange utilizing blockchain technology, and improved safety and situational awareness for border personnel through advanced interfaces and augmented reality. As an important note, this project promises to encompass fundamental rights[164].

However, these systems have been in use for several years and require regular updates and legislative measures regarding who can operate them and in which circumstances. It is essential that these systems always include a human review component, guided by a human rights perspective. These systems pose significant risks to fundamental rights, including the rights to privacy, non-discrimination, data protection, seeking asylum, and procedural rights. Safeguarding these rights necessitates a careful balance between technology and human oversight in migration management technologies.

Emotion recognition AI

The iBorderCtrl project, funded with €4.5 million under Horizon 2020, aimed to analyze "micro gestures" using an Automatic Deception Detection System (ADDS) during interviews with travelers, intending to support risk assessments. However, the final decision on allowing or denying entry would involve human border officials. Pilot projects were conducted at airports in Hungary, Greece, and Latvia, where temporary automated lie detectors were introduced, leading to certain individuals being flagged for questioning by human border officers. Notably, a journalist who tested the system immediately triggered numerous false positives[165]. The same technology, utilizing facial movements, speech, and body language analysis, was proposed for verifying an individual's vulnerability, which would determine the expedited processing of their

[164] European Commission, 'TRaining in Secure and PrivAcy-Preserving BiometricS | TReSPAsS-ETN Project | Fact Sheet | H2020' (*CORDIS | European Commission*) <https://cordis.europa.eu/project/id/860813> accessed 9 July 2023.
[165] Ryan Gallagher Jona Ludovica, 'We Tested Europe's New Lie Detector for Travelers — and Immediately Triggered a False Positive' (*The Intercept*, 26 July 2019) <https://theintercept.com/2019/07/26/europe-border-control-ai-lie-detector/> accessed 8 July 2023.

application or referral to medical, mental health, or other services, potentially influencing decisions on detention.

The iBorderCtrl project has garnered considerable attention from human rights campaigners. Homo Digitalis petitioned the Greek parliament, calling for a data protection assessment of iBorderCtrl due to its lack of transparency[166]. Green MEP Patrick Breyer launched a legal challenge against the European Commission's Research Executive Agency to obtain the project consortium's ethical assessments, resulting in the release of partially redacted documents[167].

Aside from technological advancements, a portion of the project's funding was allocated to lobbying for new legislation that would permit its deployment beyond the research stage. Following this project, no AI-based emotion detection systems have been implemented at EU borders.

These technologies pose threats to the right to privacy, freedom of thought, the right to asylum, the right against self-incrimination, the right to a fair trial, effective remedy, and other procedural rights. Deploying such technology for migration management purposes should be prohibited, as it can be unreliable and do more harm than good, particularly in the context of vulnerable communities facing extreme conditions. The amendment proposal by the European parliament to the AI Act confirms it.

Predictive Analytics

Frontex has shown significant interest in research projects like MIRROR and PERCEPTIONS, which aim to understand how Europe is perceived by individuals outside the continent and how these perceptions influence migration-related decisions. These projects employ a combination of automated analysis of text, multimedia, and social networks, along with empirical studies, to gain a comprehensive understanding of

[166] Eleftherios Chelioudakis, 'Information about Four (4) H2020 Projects at the Field of Border Management in Greece - a Freedom of Information Request to Research Executive Agency' (*AsktheEU.org*, 3 December 2019) <https://www.asktheeu.org/en/request/information_about_four_4_h2020_p> accessed 8 July 2023.
[167] Patrick Beyer, 'EU-Funded Technology Violates Fundamental Rights' (*about:intel*, 22 April 2021) <https://aboutintel.eu/transparency-lawsuit-iborderctrl/> accessed 8 July 2023.

Europe's perception. The solutions developed through these projects will undergo validation through pilot programs involving border agencies and policymakers[168].

Simultaneously, EU research projects have also focused on advancing predictive analytics technology. ARESIBO[169], led by multinational aerospace and military company Airbus and funded with nearly €7 million, aims to optimize collaboration between human operators and sensors, utilize deep learning techniques to merge diverse data sets, and provide real-time situation understanding and threat analysis for future actions. The system utilizes augmented reality to enhance situational awareness for specific missions, with planned tests in Finland, Greece, Romania, and Portugal.

However, the combination of predictive analytics and the data used and security concerns regarding immigration poses risks to fundamental rights, including the right to life, liberty, and security of the person, non-discrimination, privacy, data protection, and the right to seek asylum. As discussed in Chapter 1, such technology should be distanced from law enforcement entities and implemented by agencies like the EU Fundamental Rights Agency, which is entrusted with upholding a union that prioritizes fundamental rights. This is the only way to mitigate the risks associated with predictive analytics.

Disclosing of reports to the public: inconsistencies in disclosing

During the construction of this chapter, the objective was to analyze a wide range of reports in order to comprehensively examine the incorporation of ethical and fundamental rights considerations in relation to the securitization of migration. This analysis was conducted through a keyword analysis to determine to what extent consortiums involved in the development of critical technologies for migration management purposes are adequately addressing the potential implications these technologies may have on the communities in which they are intended to be deployed.

However, the implementation of this extensive analysis was hindered. Upon searching for these reports, it was observed that consortiums either partially disclose or do not make available the reports submitted to the European Commission on their

[168] Statewatch, 'Borders, Budgets and beyond: LIBE Report Sheds Light on Frontex's Priorities for Implementing Its New Mandate' (*Statewatch*, July 2020) <https://www.statewatch.org/news/2020/july/borders-budgets-and-beyond-libe-report-sheds-light-on-frontex-s-priorities-for-implementing-its-new-mandate/> accessed 9 July 2023.
[169] Aresibo Consortium, 'Aresibo' (*Aresibo)* <https://aresibo.eu/> accessed 9 July 2023.

project websites. Moreover, over time, consortiums tend to neglect the maintenance of these websites, rendering most of them obsolete. Consequently, it was not feasible to retrieve documents pertaining to FP7 projects due to the considerable amount of time that has passed, while Horizon Europe projects, being relatively recent, do not have fully functional websites yet. In parallel, the Community Research and Development Information Service (Cordis) page developed by the Commission only provides a project summary, information about consortium members, and grant allocation, with no access to comprehensive reports.

According to the regulations of these funds, beneficiaries of Horizon Europe are required to provide open access to peer-reviewed scientific publications resulting from their projects. This means that these publications must be made available online, free of charge, for any user. In addition, beneficiaries must also provide open access to research data following the principle ‘as open as possible, as closed as necessary’. This means that research data should be made available for access and reuse unless there are specific reasons for not doing so.

As for reports to the Commission, beneficiaries are required to submit periodic and final reports on the progress of their projects. These reports include both technical and financial information and are used by the Commission to monitor the implementation of the project and assess its impact. However, these reports are not necessarily made available to the public. The regulations do not specify mandatory requirements of disclosure of any reports.

Although it is important to acknowledge that the summaries provided by the Commission serve as an initial effort towards transparency and accountability, they fall short when it comes to dealing with public funds. Considering that taxpayers' billions are allocated to these programs, it is crucial that the reporting is made accessible to the public. While there may be a need to keep reports on technological specifics confidential for competitive reasons, the same should not apply to ethical reports. The public should be guaranteed a minimum level of disclosure regarding the technical aspects of these technologies. Among all the projects for which documents could be obtained, only 13 ethical reports were found, 4 belonged to Andromeda project, and 3 fully redacted.

One could argue that despite the reports not being readily available online for public access, it could be expected that the European Research Executive Agency (REA) would disclose these documents upon inquiry, with appropriate safeguards in place. However, the opposite seems to be the case. The REA consistently employs similar arguments to withhold the disclosure of ethical reports. This can be observed through inquiries made on the website Ask the EU, where several researchers sought documentation on controversial projects such as iBorderctrl, Foldout, and Roborder. Despite persistent requests, all of them received the same response*:*

> Access was denied based on the protection of the privacy and integrity of the individual and the protection of commercial interests of a natural or legal person.[170]

Simultaneously, in another request regarding the Ethical reports of iBorderCtrl, apart from the comment mention above persist, there is also mention that the request made to access these reports did not 'put forward any reasoning pointing to an overriding public interest in disclosing the documents requested', nor did the Director of REA 'been able to identify any public interest capable of overriding the interests protected by Article 4(2), first indent, of Regulation 1049/2001.'[171] Nevertheless, it could be argued that withheld of information could lead to misuse of the data and undermine the detection of illegal border activities.

A concerning trend becomes apparent: as projects become more controversial, consortiums tend to disclose fewer documents, and the European Research Executive Agency does not facilitate the process of granting access to these reports to the European Community for scrutiny.

The lack of transparency and accountability in withholding these reports undermines public trust in EU institutions. The absence of disclosure raises concerns about the reasons behind keeping these reports hidden. Ethical reports should be mandatory for disclosure, particularly when projects raise ethical concerns that could potentially result in violations of fundamental rights. It is crucial for society to be

[170] Eleftherios Chelioudakis (n 146).
[171] Riccardo Coluccini, 'Letter to R Coluccini' (*AsktheEU.org*, 3 December 2019) <https://www.asktheeu.org/en/request/6087/response/20050/attach/html/3/Letter%20to%20R%20Coluccini.pdf.pdf.html> accessed 8 July 2023.

informed about the Commission's plans for mitigating the impacts of approved projects and the lessons learned from their outcomes.

Disclosing of reports to the public: document analysis

As demonstrated previously, the projects implemented within research and innovation frameworks involve controversial applications of technologies, particularly when examining their potential deployment and impact on vulnerable communities. However, in order to comprehensively assess whether these controversial projects have adequate safeguards regarding their timing and usage, it is essential to examine the contents of the reports submitted to the Commission by the implementing consortiums. These reports provide information on various aspects, including the project's current stage, technological advancements, dissemination plans, timeline, budget allocation, ethical considerations, and more. Through an analysis of these reports, one can determine whether the consortiums to determine whether fundamental rights perspective was sufficiently included.

For the purpose of analysis, the project selection conducted by Statewatch[172] was taken into consideration. Their report encompassed 23 projects from FP7 and 28 projects from Horizon2020. Subsequently, I personally conducted the selection process for 17 projects under Horizon Europe, taking into account projects that had been approved up until May 2023. The focus of this selection was solely on projects centered around the development of migration management technologies within various frameworks. A summary of the projects can be found in Figure 4, and Annexes 1 and 2 of the Appendices.

Initially, the aim of this analysis was to select out of the 68 projects identified, the projects that fit three criteria: (1) the highest level of funding investment, (2) the relevance of the technology being developed, and (3) the broadest scope of implementation and deployment. However, due to the limited time frame available for this research and the unexpected lack of widespread availability of reports, this approach proved unfeasible. Reports had to be requested from the REA without any guarantee of their disclosure. Therefore, for future and more extensive analyses, it is recommended to conduct a more thorough examination following the aforementioned

[172] Kilpatrick and Jones (n 15).

criteria, provided that the REA becomes more collaborative in terms of providing access to the necessary documents.

As a result of relying on websites created for dissemination purposes by the consortia to gather these reports, it was only possible to find reports from projects approved under Horizon 2020. FP7 projects, which were implemented between 2007 and 2013, do not have accessible websites and no third party requested documentation. As for Horizon Europe, since the projects are still in their early stages, they are not yet accessible.

After conducting extensive research, a total of 182 documents were discovered, collected, and organized according to their respective projects. The table below provides the number of documents associated with each project. It is important to note that these documents do not include peer-reviewed journal articles that were published as part of the research conducted on these technologies.

As regarding the analysis and due to the sample not being representative enough and consistent, the analysis the analysis was simplified to provide a demonstration of the type of information that can be obtained by examining these documents. In the future, a more comprehensive and analytical analysis can be conducted to yield more robust insights.

Name	Framework Programme	Documents disclosed by the consortium	Disclosed by third parties	Number of documents
AI-ARC	H2020	x	-	3
ANDROMEDA	H2020	x	-	18
ARESIBO	H2020	x	-	13
BODEGA	H2020	x	-	13
BorderSens	H2020	-	-	0
BorderUAS	H2020	-	-	0
CAMELOT	H2020	-	-	0
COMPASS2020	H2020	-	-	0
CRiTERIA	H2020	-	-	0
D4FLY	H2020	x	-	15

E2mC	H2020	-	-	1
EFFECTOR	H2020	x	-	3
FLYSEC	H2020	x	-	9
FOLDOUT	H2020	-	Partially	20
iBorderCtrl	H2020	-	Partially	6
iMARS	H2020	-	-	1
ITFLOWS	H2020	x	-	30
MARISA	H2020	-	-	0
MIRROR	H2020	x	-	4
PERCEPTIONS	H2020	x	-	7
PROMENADE	H2020	x	-	4
PROTECT	H2020	-	-	0
RANGER	H2020	x	-	10
ROBORDER	H2020	x	-	12
SafeShore	H2020	-	-	0
SilentBorder	H2020	-	-	0
Smart-Trust	H2020	-	-	0
SMILE	H2020	x	-	12

Figure 4: Projects selected under Horizon 2020 and documents disclosure analysis

As observed, the lack of consistency is evident, with numerous projects having no documents available online. This raises the question of why these documents are being withheld from disclosure and whether the Commission should take the initiative to standardize reporting mechanisms on its platforms. Additionally, in certain cases where documents are requested by third parties, they are often heavily redacted by the REA, which further compounds the issue of limited transparency.

After collecting all the reports, a term frequency analysis was conducted, and it can be visualized in a form of a word cloud. The goal of this analysis is to understand which keywords are mentioned more frequently on the documents. Bigger the number of times, bigger the word.

Figure 5: Word Cloud created by the author during the analysis in Orange.

By converting it into numbers:

	Number of times registered	Word
1	15269	data
2	8076	project
3	7689	border
4	6507	eu
5	6409	information
6	6127	migration
7	5785	european
8	5439	system
9	5092	security
10	4715	deliverable
11	4712	research
12	4334	andromeda
13	4334	figure
14	4235	dissemination
15	4163	rights

Figure 6: Term frequency analysis generated by the author in Orange.

As observed, the term frequency analysis revealed that, apart from the expected keywords such as migration, border, and data, the term security prominently appeared in the reports with 5092 mentions. The next relevant term is rights with 4163 mentions. If the analysis finished here, it could be argued that the consortia even though the technology being developed enters the security sector, they also mention rights.

Nevertheless, the analysis continued with a bi-gram analysis. Bi-gram analysis is a specific case of an n-gram analysis, in which the text is split into pairs of consecutive words, and the frequency of each pair is counted. Now, it was possible to spot that the term rights was also being paired in the bi-grams 'rights reserved' and 'consortium rights' were showing 1609. Therefore, meaning that relevant mentions of rights were only 2554 times.

By comparing the frequency of both terms, security and rights, it can be concluded that security is mentioned twice more than rights. Even tough is not a low amount for mentioning rights, it is still stronger the connection that the development of migration management technologies has with security than with ensuring the rights of communities that are not even popping up in the most used terms, such as migrants or refugees. Furthermore, this underscores the fact that the projects approved by the Commission have a strong focus on security. From a human rights perspective, blending the need for security and protection with migration can lead to the development of tools that may not fully comply with fundamental rights.

In summary, this kind of text analysis conducted on relevant documents can shed light on conclusions that were unexpected. In this case, the conclusion aligns with the initial expectations, indicating a connection between migration management technologies and security. Even in keywords. Nevertheless, as a positive note, the mentioning of rights shows that at least the consortia are keeping them in mind.

3.3. The ethical requirements gap

The European Union positions itself as a leading authority on ethics within Europe and globally[173]. It aims to demonstrate its commitment to EU values and

[173] 'Communication: Building Trust in Human Centric Artificial Intelligence | Shaping Europe's Digital Future' (8 April 2019) <https://digital-strategy.ec.europa.eu/en/library/communication-building-trust-human-centric-artificial-intelligence> accessed 8 July 2023.

promote them as a reference in various sectors. This also applies to the regulations governing Horizon 2020 and Horizon Europe, where ethics plays a significant role.

On paper, the Horizon 2020 research and innovation programme claimed to adhere to the highest standards of ethics and integrity. However, there is a documented gap between the intentions of Horizon 2020's Responsible Research and Innovation approach and its actual implementation. In 2014, the Rome Declaration was adopted to incorporate human rights and societal values into all decisions related to RRI. The conference held during the Italian Council Presidency highlighted the importance of technology acceptance through early and continuous engagement of stakeholders for sustainable and desirable innovation[174].

To be eligible for the Horizon 2020 Research Programme, applicants were required to undergo a comprehensive examination process consisting of two or three steps to prevent unethical research and funding. Initially, an applicant's 'Ethics Self-Assessment' was required during the preparatory phase. Subsequently, an 'Ethics Review' was conducted by ethics experts for proposals that met the funding threshold. This review included an 'Ethics Pre-Screening' and an 'Ethics Screening' performed by independent ethics experts. If necessary, 'Ethics Checks' were implemented as a third step during the research project. In theory, experts had the authority to reject proposals based on ethical grounds. However, no information regarding the review process, reviewers, or review results was published[175].

In 2020, a study by Novitzky et al.[176] analyzed 13,644 Horizon 2020 projects over six years and found that societal values and ethics were poorly integrated at the operational level. This was attributed to insufficient training for researchers regarding RRI and competing objectives within Horizon 2020, such as economic value. Novitzky concluded that multiple agendas led to indecision and compromises, resulting in a failure to consistently integrate societal values into Horizon 2020 operations and research projects. The Responsible Research and Innovation framework[177] uses ethical

[174] Patrick Beyer (n 147).
[175] ISAO, 'Ethics Appraisal Process in Horizon Europe: Key Changes' (*ISAO*) <https://www.privanova.com/resources/ethics-appraisal-process-in-horizon-europe-key-changes> accessed 4 July 2023.
[176] Peter Novitzky and others, 'Improve Alignment of Research Policy and Societal Values' (2020) 369 Science 39.
[177] 'Global Indicators Framework for Socially ... | Open Research Europe' <https://open-research-europe.ec.europa.eu/articles/2-36> accessed 4 July 2023.

standards as an indicator instead of fundamental rights. Therefore, if researchers are facing challenges upholding ethical standards, it can be argued that implementing fundamental rights considerations in these research and innovation projects would be even faulty.

Moving on to Horizon Europe, the Commission has made changes to the Ethics appraisal process, but it remains to be seen if significant practical changes will occur. These changes reflect both procedural advancements and considerations of the most important technological developments, particularly with regards to Artificial Intelligence. However, the assessment of potential dual usage technologies was simplified in Horizon Europe in comparison with Horizon 2020 requirements, as it can be observed in both regulations[178]. Horizon 2020 required a full disclosure report of potential dual usages and in Horizon Europe the consortium only need to check a box. On the later frameworks it was necessarily to conduct due diligence, presently it was simplified by only requesting a declaration by the applicants and no further checks will be done in evaluation or grant management. This could reduce safeguards for the development of migration management technologies, as discussed in Chapter 1.

The changes within frameworks focus on three key areas: (1) Research Integrity, by updating the Ethics Self-Assessment to explicitly reference the European Code of Conduct for Research Integrity; (2) updating the Ethics Self-Assessment table to allow applicants to further elaborate on the ethical dimension of their proposals and compliance with ethical principles; and (3) enhancing the supervisory role of Ethics Advisory Boards and individual advisors[179].

These changes emphasize the significance of the Ethics Advisory Board and, for the first time, place AI at the forefront of ethical compliance requirements in EU R&D. While it is widely acknowledged that the approval and implementation of the AI Act will reinforce this provision, it is crucial to recognize that AI was already taken into account during the establishment of this framework. However, technologies developed for migration management necessitate a robust ethics body that safeguards the fundamental rights of migrants while comprehending the potential negative implications of AI. Therefore, to complement ethics regulations, conducting fundamental rights

[178] ISAO (n 175).
[179] ibid.

impact assessment would be a stronger tool to strengthen safeguards for the rights of these communities.

Now more than ever and in light of the scandal surrounding the arrest of Eva Kaili, Vice President of the European Parliament and a prominent figure in research and innovation policy, on corruption charges in December 2022[180], it is imperative for the Commission to prioritize the preservation of ethics and integrity in R&D endeavors. The resolution passed by the European Parliament to establish a cross-institutional ethics body must be effectively implemented as the preeminent supervisory entity. This will serve to prevent the recurrence of any past missteps witnessed during the Horizon 2020 program within the Horizon Europe framework.

3.4. Conclusions

In conclusion, this analysis sheds light on the development and implementation of migration management technologies within the European Union, specifically focusing on projects funded under the Research Framework Programmes, such as Horizon 2020 and Horizon Europe. The examination of available documents and the identification of key keywords reveal a concerning trend where the emphasis is placed on security and technology advancement, often at the expense of fundamental rights and ethical considerations.

It is evident that the current approach to ethics and transparency within these projects is inadequate. The limited availability and inconsistent disclosure of reports raise questions about the intentions and priorities of the consortiums involved. The reliance on third-party websites and the lack of comprehensive information hinders the thorough analysis of the ethical implications and impacts on affected communities.

To address these issues and ensure the alignment of projects with ethical standards and fundamental rights, several recommendations are proposed. Firstly, the **mandatory disclosure of ethics reports at all stages of the grant agreement should be implemented**. This would provide transparency and enable stakeholders to assess the ethical considerations and safeguards in place. Additionally, **the European Commission should standardize disclosure practices in Cordis, the platform used**

[180] Peter Wells and others, 'Live News Updates from December 12: Von Der Leyen to Push for EU Ethics Body, Microsoft to Take 4% LSE Stake' *Financial Times* (12 December 2022).

for project summaries and information dissemination, to ensure consistency and accessibility of relevant documents.

Furthermore, it is essential to **complement existing ethics regulations with the requirement for conducting fundamental rights impact assessments** throughout all stages of project development, starting from the initial stages prior to the signing of the grant agreement. This would provide a comprehensive evaluation of the potential impacts on human rights and allow for necessary adjustments to mitigate any unintended adverse effects.

By implementing these recommendations, the European Union can enhance its commitment to ethics, transparency, and the protection of fundamental rights in the development and deployment of migration management technologies. It is crucial to bridge the gap between rhetoric and practice, ensuring that projects align with the values and principles upheld by the European Union, while prioritizing the well-being and rights of affected communities. Only through such concerted efforts can the EU uphold its position as a global leader in promoting ethical and responsible research and innovation.

Chapter 4: EU-private Partnerships in migration management – focus on Private Military and Security Companies (PMSCs)

Public-private partnerships (PPPs) are authorized by Articles 185, 186, and 187 of the Treaty on the Functioning of the European Union. These articles provide a legal framework for the Union to engage in collaborative arrangements with external entities, facilitating the implementation of multiannual framework programmes in the areas of research, technological development, and demonstration programmes. Through these provisions, the European Union is enabled to establish agreements and partnerships with third parties to advance its objectives in these domains.

However, PPPs are not limited to the European Union context. They are widely employed by public bodies and institutions across various sectors to establish collaborations with the private sector, research institutions, and NGOs. Therefore, in the regulations of Horizon 2020 and Horizon Europe, it can be observed that there was a need to define public-private partnerships under these programs, always referring to the

treaties. In Horizon Europe, they go further by designating these partnerships as ‘European Partnerships,’ referring to collaborations established by different entities with the European Commission.

In the scope of this research, the focus will be on partnerships established by EU bodies, institutions, and agencies with private entities, which will be referred to as EU-private partnerships.

The European Union is a unique alliance comprising 27 European countries, collectively committed to upholding EU values in all their operations. Moreover, as one of the world's wealthiest regions, it possesses unparalleled resources, stability, and security. Consequently, the EU holds significant influence when it comes to upholding agreements, both within the single market and beyond. Agreements established by the Union are not lightweight and uphold consideration by other players that may further operate with the stakeholder getting these funds. It is imperative that any partnership established by the EU, whether within the single market or externally, is grounded in the principles of fundamental rights. This principle should remain paramount even in situations where promoting security and defence becomes necessary, as these two aspects are often intertwined when safeguarding borders and migration management. Union investments possess a distinct characteristic: the ability to engage in long-term agreements and high-risk projects, made possible by the stable cash flow that is available to them. This level of financial stability is often beyond the reach of ordinary investors in similar positions. As a result, this proposition holds significant appeal for companies operating in sectors such as aerospace and security.

However, in situations where mechanisms to ensure compliance with fundamental rights are not adequately in place, partnerships established in sensitive areas like defence and security can potentially undermine the rights of communities[181]. It is crucial that the European Union remains accountable for the funds allocated to implement projects in these fields.

While research and innovation are essential, they should not serve as an excuse to compromise the rights of migrants. Additionally, any technology developed under these programs must not be used as a means to promote or perpetrate human rights violations. This is supported by the Article 54 of the Charter of Fundamental Rights

[181] Chelioudakis (n 8).

about the Prohibition of abuse of rights. Until today the Court of Justice of the European Union only mentioned Article 54 of the Charter of Fundamental Rights in an opinion emitted in the case *Bastei Lübbe GmbH & Co. KG v Michael Strotzer*[182] explaining to what this article can not be applied to:

> In the second place, Article 54 of the Charter prohibits abuse of the rights recognised therein. It is true that that article is directed mainly against acts which, under cover of the rights recognised by the Charter, seek in reality to combat fundamental rights and to destroy them. Clearly, infringement of an intellectual property right does not constitute an act of that type[183].

Therefore, the court leaves room for further interpretations but emphasizes that this article cannot be broadly applied, but rather limited to extreme cases of fundamental rights violations. Consequently, it can be argued that Article 13[184], which guarantees freedom of the arts and sciences, cannot be invoked in ways that infringe upon the rights of migrants, such as the right to privacy, the right to asylum, freedom of thought, protection of personal data, non-discrimination, the right to an effective remedy, and the right to a fair trial, among others discussed in Chapter 1. When research and innovation involve the deployment of these technologies on vulnerable communities, such as migrants, it constitutes an abuse of Article 13 that undermines several other rights enshrined in the charter.

EU-private partnerships funded by research and innovation programs encompass a diverse range of entities, including private companies, academic institutions, research institutions, and other public organizations. This chapter will conduct an in-depth analysis of partnerships established under key frameworks such as Horizon Europe, Horizon 2020, and FP7, as well as initiatives like the European Defence Fund and its predecessors, PADR and IDIDP. Special attention will be given to innovative projects that have implications for border management, security, and defence. It is crucial to acknowledge that this research will require ongoing updates to encompass new funding calls and approved projects. The analysis conducted herein considers projects approved under FP7, Horizon 2020 and Horizon Europe approved until May 2023. However, as

[182]Case C-149/17 *Bastei Lübbe GmbH & Co. KG v Michael Strotzer* [2018] EU:C:2018:841.
[183] Case C-149/17 *Bastei Lübbe GmbH & Co. KG v Michael Strotzer* [2018] EU:C:2018:841, Opinion of AG Szpunar, para 43

the landscape of funding and project approvals continues to evolve, it is necessary to maintain an up-to-date perspective to capture the latest developments and their implications.

The significance of this analysis lies in the imperative to comprehend and identify the key actors who frequently operate across multiple fields, thereby fostering and strengthening close connections with EU institutions. This dynamic creates a self-fulfilling loop[185] between the supply and demand of the security, border management, and defence sectors, all funded by the EU. This intricate relationship involving the EU, private companies within the security industry, and lobby groups has been described as a spider's web of trust and influence[186] and has led to influencing EU policy-making. However, the true extent of this influence is not easily discernible and requires a thorough understanding and analysis. By unravelling this complex network, we can gain insights into the dynamics at play and better comprehend the interplay between these actors.

Building upon this notion, the UN Working Group on the use of Mercenaries[187] emphasizes that the most effective approach to regulating private military and security companies is through the establishment of an international legally binding instrument. This highlights the criticality of effectively regulating and overseeing these relationships that should not be seen as ordinary partnerships.

4.1 Private Military and Security Companies: main players, relevancy in getting EU funds and number of projects allocated.

In the realm of new technology projects applied to migration management and border control, there are two major funding programs that play a significant role in promoting and supporting research and innovation across various fields, particularly

[185] Bram Vranken, 'Securing Profits: How the Arms Lobby Is Hijacking Europe's Defence Policy'
[186] Jordi Calvo Rufanges (ed), *Military Spending and Global Security: Humanitarian and Environmental Perspectives* (Routledge 2022).
[187] UN Working Group on the use of mercenaries,'Report on the impact of the Use of Private Military and Security Services in Immigration and Border Management on the Protection of the Rights of All Migrants' (UN General Assembly 2020) A/HRC/45/9

those directly impacting the aforementioned areas. These funds are Horizon Europe and the European Defence Fund, along with their respective predecessors[188].

Horizon Europe, scheduled to run from 2021 to 2027, serves as the primary EU fund for research and innovation. Notably, within the first Horizon Europe security research call under the pillar Civil Security for society, with a total amount of €148.5 million made available, received 230 submitted proposals, requesting more than €1 Billion in funds. Simultaneously, it can be observed that 50% of the requests were made under the calls 'Better protect the EU and its Citizens against Crime & Terrorism' and 'Effective management of EU external borders'. These two calls allow for development of projects that will generate projects related with new technologies and the migration and law enforcement sector. These figures clearly demonstrate that the EU recognizes the priority of these areas and is committed to making significant investments in them and that different stakeholders work towards achieving them. These funds act as a catalyst, driving private actors to align with the EU's vision for the future of the Union and support the self-fulfilling loop of public request and private demand.

Although it is still early to draw conclusions specifically from Horizon Europe, its predecessors, Horizon 2020 and FP7, provide insightful statistics regarding the involvement of private actors in the development of new technologies for border management projects. An analysis conducted by Statewatch[189] reveals that from 2007 to 2020, a total of €341 million was allocated to such projects under these funding programs, with €163 million (representing 48% of the investment) directed towards private institutions. As detailed in Chapter 3, some projects implemented under these funds, such as ROBORDER and iBorderCtrl, have been controversial and found to be non-compliant with human rights standards. Despite the lack of significant improvements or changes in mechanisms to ensure fundamental rights, investment in these types of projects has continued to rise. Therefore, it can be argued that Horizon Europe is likely to follow a similar pattern of allocating substantial funds to private institutions and potentially witnessing the implementation of controversial migration projects.

In relation to the European Defence Fund, its primary objective is to support the research and development of cutting-edge and interoperable defence technologies and

[188] Chelioudakis (n 8).
[189] Kilpatrick and Jones (n 15).

equipment[190]. Specifically, it focuses on enhancing air, land, and sea surveillance and protection to ensure the safety of the EU territory. The significant increase in investment for this fund of +1256% compared with the allocated budget for 2014-2020[191], reaching €9.5 billion for 2021-2027, reflects the Union's strong commitment to prioritizing defence and security and its intention to engage the private sector in this endeavour towards a secure and robust EU.

Upon analyzing the private entities involved in EU-private partnerships under these funds, it becomes evident that there is an overlap among participants. In both funds, the companies that have secured a larger number of projects are Thales Group, Airbus Group, Leonardo SA, and their subsidiaries, along with Indra Sistemas. The distribution among these entities is detailed in the table below. ATOS was considered to show that the currently approved projects under Horizon Europe may show the rise of new stakeholders that have been present in a more low-profile segment in obtaining projects under these funds. It is important to mention that it was not possible to analyse the most recent approved projects under the European Defence Fund because they were not made available online. Nevertheless, Airbus published on its website confirming its presence under 8 new projects. This confirms a consistency within actors[192].

	Number of projects					
Name of the company	FP7 (finalized)	Horizon 2020 (finalized)	Horizon Europe (1st round)	PADR (finalized)	EDIDP (finalized)	**Total**
Leonardo SA (and its subsidiary SELEX)	14	3	0	4	5	6
Thales Group	13	7	4	5	5	4
Airbus Group	6	3	0	2	3	4
Indra Sistemas SA	5	0	0	3	5	3
ATOS group	1	1	4	0	0	

Figure 7: Number of projects granted under FP7, H2020, Horizon Europe, PADR and EDIDP. Created by the author.

[190] 'The European Defence Fund (EDF)' (n 147).
[191] Statewatch & Transnational Institute (n 9).
[192]Airbus 'Airbus Launches European Defence Fund R&D Projects | Airbus' (*Airbus*, 31 January 2023) <https://www.airbus.com/en/newsroom/press-releases/2023-01-airbus-launches-european-defence-fund-rd-projects> accessed 29 June 2023.

Characterization of the main players.

The main players evidenced above, Thales Group, Airbus Group, Leonardo SA, and their subsidiaries, along with Indra Sistemas, are leading players in the defence, security and aerospace field operating in the EU. This industry shows extreme relevance for the union market, with a turnover in 2020 of €119 billion, directly employing 463.000 people[193].

Furthermore, the table below highlights another noteworthy observation: these companies, on average, have 25% ownership by member states of the European Union. This raises an important question: if the projects undertaken by these companies compromise human rights and contribute to the development of stricter security policies regarding migration, can the member states, as the largest individual stakeholders sitting on the boards of these companies, be held accountable? To what extent is it not biased to blame only the private institutions for non-human rights complying behaviours when the Union and Member States hold as priority these private institutions?

Name	Shareholders		
	Date	Name	Shares in %
Thales Group[194]	December 2022	French State	25.67%
		Dassault Aviation	24.62%
		Thales	1.53%
		Employees	2.97%
		Other Shareholders	45.21%
Leonardo[195]	March 2023	Institutional	51,80%
		Ministero dell'Economia e delle Finanze	30,20%
		Retail	17,50%
		Institutional unidentificed	3%
		Treasury shares	0,50%
Airbus	March 2023	Free Float	74%
		Shareholder Agreement 25,8% (3 govs)	

[193] European Commission, 'Defence Industry | Fact Sheets on the European Union | European Parliament' (*European Commission*, 31 August 2022) <https://www.europarl.europa.eu/factsheets/en/sheet/65/defence-industry> accessed 1 June 2023.
[194] Thales Group, 'Share and Shareholding' (*Thales Group*) <https://www.thalesgroup.com/en/investor/retail-investors/share-and-shareholding> accessed 29 June 2023.
[195]Leonardo, 'Shareholders Base' (*Leonardo)* <https://www.leonardo.com/en/investors/stock-info/shareholders-base> accessed 29 June 2023.

Group[196]		SOGEPA (french gov agency)	10,90%
		GZBV (german gov agency)	10,80%
		SEPI (spain gov agency)	4,10%
		Treasury shares	0,20%
Indra Sistemas[197]	May 2023	Sociedad Estatal de Participaciones Industriales SEPI	25,16%
		Fidelity Management Research	9,96%
		Amber Capital	7,24%
		SAPA	5%
		Escribano	3%
		Melqart	1,03%
		Others	48,62%

Figure 8: Shareholders structure among main players. Created by the author.

The legal foundation of **EU company law**[198] is derived from Articles 49, 50(1) and (2)(g), and 54, second paragraph of the TFEU[199]. For the purpose of definition, the European Commission has characterized state-owned companies as 'non-financial companies in which the state exercises control, irrespective of the extent of ownership.'[200] Consequently, the companies mentioned above can be classified as state-owned entities. However, the Commission has not provided specific guidelines on how these companies should operate within the single market or beyond. Meanwhile, national legislations within the EU member states play a significant role in determining the legal status of these companies, with specific details varying across jurisdictions, and which are the limits of their operation[201].

Therefore, it is crucial to consider the **OECD Guidelines on Corporate Governance of State-Owned Enterprises**[202], as they offer a comprehensive framework of best practices concerning the legal and regulatory aspects, professionalization of state ownership, and corporate governance arrangements of state-owned enterprises. These guidelines serve as the most applicable set of principles for EU state-owned enterprises

[196] Airbus, 'Investors | Share Price & Information | Airbus' (*Airbus,* 22 June 2021) <https://www.airbus.com/en/investors/share-price-and-information> accessed 29 June 2023.
[197] Indra, 'Shareholders Structure | Indra' (*Indra)* <https://www.indracompany.com/en/accionistas/shareholders-structure> accessed 29 June 2023.
[198] DIRECTIVE (EU) 2017/1132 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2017 relating to certain aspects of company law (codification) [2017] OJ L169/46
[199] TFEU OJ C326/47
[200] Directorate-General for Economic and Financial Affairs, '*State-Owned Enterprises in the EU Lessons Learnt and Ways Forward in a Post-Crisis Context'* (Publications Office of the European Union 2016).
[201] Directorate-General for Economic and Financial Affairs (n 175).
[202] OECD, 'OECD Guidelines on Corporate Governance of State-Owned Enterprises' (2015) http://dx.doi.org/10.1787/9789264244160-en.

due to the absence of specific EU guidelines on the subject matter. The guidelines underscore the importance of a level playing field, transparency, accountability, equitable treatment of shareholders and investors, stakeholder relations, responsible business conduct, and the professionalization of boards of directors. In the context of the companies being examined, practices of good governance must be followed and transparently reported to the public, when requested. These companies operate in the defence and security sector and their products are used in the migration and border management sector, directly impacting the life of migrants and their fundamental rights.

The CJEU has rendered judgments in cases involving state-owned enterprises, particularly within the domain of EU competition law and EU Merger Regulation. However, there is a dearth of cases specifically addressing the violation of individuals' fundamental rights. Nonetheless, the CJEU has explicitly clarified that state-owned enterprises are subject to the same competition rules as private companies and cannot exploit their state ownership to secure an unjustifiable advantage in the market[203]. Consequently, and applied to security and defence market, the funding provided by the Commission represents a substantial portion of the available research and innovation fund within this market in Europe[204], and the beneficiaries of such funding are predominantly state-owned enterprises, as seen above, it is conceivable that their legal status may afford them an unfair advantage in the market.

Moving on to the significant impact and influence of the defence and security market, the aforementioned companies hold a pivotal role in lobbying for the sector. They actively participate in relevant lobbying organizations and provide legal advice and consultation to the European Parliament and the European Commission in the policy-making process. Consequently, the close interconnection between market positioning in defence and security and decision-making authorities is a daily occurrence. This will be explained further on this chapter.

In parallel, it could be argued that research and innovation could not be enough to verify a pattern of installed power exchange between institutions and these private

[203] Geneviève Lallemand-Kirche, Caroline Tixier and Henri Piffaut, 'The Treatment of State-Owned Enterprises in EU Competition Law: New Developments and Future Challenges' (2017) 8 Journal of European Competition Law & Practice 295.
[204] Aurélie Pugnet, 'EU Defence Industry Pressures Commission, EU Countries to Step up Financing' (*euractiv*, 27 June 2023) <https://www.euractiv.com/section/defence-and-security/news/eu-defence-industry-pressures-commission-eu-countries-to-step-up-financing/> accessed 3 July 2023.

stakeholders under EU-private partnerships. Nevertheless, their relationship extends beyond meetings and projects approved. They have been playing an active role in providing different services to different agencies.

For instance, in 2014, Selex Sistemi Integrati S.p.A, a subsidiary of Leonardo, participated in a border security agreement with Libya, funded by the EU and Italy. This agreement entailed the provision of advanced border control systems, including satellite-based systems for monitoring the entire Libyan coastline[205].

In another example, in 2020, it was revealed that the EU had allocated €100 million to Airbus and two Israeli companies to operate autonomous drones. The purpose of deploying these drones was to detect and track refugees and migrants attempting to cross the Mediterranean Sea on their journey to Europe[206].

The EU's reliance on Private Military and Security Companies and its delegation of migration control functions to these stakeholders can blur the lines of accountability, responsibility, and transparency in ensuring fundamental rights. The prioritization of market-driven goals aimed at ensuring the prosperity of these companies becomes intertwined with the EU's priorities of safeguarding border security. Unfortunately, this often leads to the oversight and neglect of the communities directly affected by the deployment of these systems.

4.2 Private Military and Security Companies: impact on Lobbying and Policy-making at the EU

PMSCs actively participate in the formulation of migration border policies. In 2017, two civil society organizations, Statewatch and The Transnational Institute, conducted significant research revealing the effectiveness of defence and security companies in shaping and exerting influence over EU policies and decision-making processes[207]. The organizations documented the extensive lobbying activities of major security companies, including Airbus, Leonardo, and Thales, through their respective lobby associations such as the European Organisation for Security (EOS) and the

[205] Mark Akkerman, 'Border Wars: The Arms Dealers Profiting from Europe's Refugee Tragedy' (Stop Wapenhandel & Transnational Institute, 2016).
[206] Jasper Jolly, 'Airbus to Operate Drones Searching for Migrants Crossing the Mediterranean' (*The Guardian*, 20 October 2020) <https://www.theguardian.com/business/2020/oct/20/airbus-to-operate-drones-searching-for-migrants-crossing-the-mediterranean> accessed 1 June 2023.
[207] Chris Jones, 'Market Forces: The Development of the EU Security-Industrial Complex' (Transnational Institute & Statewatch, 2017).

AeroSpace and Defence Industries Association of Europe (ASD), both strategically located in Brussels. These companies concurrently strengthen their market position by enhancing their expertise in border management technologies. Leveraging the opportunities provided by EU institutions, they effortlessly expand their influence beyond and solidify their market presence.

In a report published in 2020, the UNHRC examined the impact of private military and security services on immigration and border management[208]. The UNHRC underscored that such companies wield significant influence in policy-making procedures, as they offer technical expertise and consultancy services to national governments and international institutions. Additionally, these companies utilize their media networks to shape the narrative, and they may also produce, or finance papers aimed at guiding the direction of policy-making in the realms of security, border management, and defence.

To better illustrate the lobbying presence of these companies in EU institutions, the table below summarizes data present on the website LobbyFacts[209] by showing the high number of meeting hold by these companies with the European Commission and the European Parliament and the lobbying groups they belong to.

Name	**Total lobbysists declared**	**Affiliation**		**Number of meetings (2014- MAY 2023)**
Airbus[210]	11 Full time equivalent 4,75	ASD EOS CDPF Kangaroo Group ESOA NEREUS A4E EARSC	Eurospace AFEP AMISA2 AVISA EBIT BBE ECSO ERT GAIA-X	268
Atos[211]	10	5G Infrastructure Association,	IP2Innovate, HIPEAC, the	31

[208] Working Group on the use of mercenaries (n 178).
[209] Lobbyfacts, 'Search | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/> accessed 1 June 2023.
[210] Lobbyfacts, 'Airbus | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/datacard/airbus-group-nv?rid=2732167674-76> accessed 29 June 2023.
[211] 'Atos SE (France) | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/datacard/atos-se-france?rid=249876817241-03> accessed 29 June 2023.

	Full time equivalente 2,5	EFFRA, BDVA including ETAMI, ECSO including Women4Cyber GAIA-X, European Alliance for Industrial Data Cloud & Edge, Charter of Trust, ITEA, IDSA,	Linux Foundation, ARIC, EuropeanIssuers, DIGITALEUROPE Association, ETP4HPC, EA-MHPC, EuroHPC, AENEAS and FIWARE Foundation	
Indra Sistemas[212]	4 Full-time	ASD EOS ECSO UNIFE ERTICO ITS EUROPE UITP	Eurospace AFEP AMISA2 AVISA EBIT BBE ECSO ERT GAIA-X	19
Leonardo[213]	2 Full-time	ASD EOS Confindrustria	UNIFE ERT CSR Europe	61
Thales[214]	7 Full time equivalent 3,5	ASD ECSO UNIFE CDPF	Club Europe & Défense Eurosmart BITKOM	36

Figure 9: Lobbying structure of main players. Created by the author.

Commenting on the specific details of the meetings and the exact extent of the impact of these stakeholders in policy-making is challenging without further evidence. Nevertheless, it is clear that they hold a long-lasting, constant and regular presence inside the EU institutions. Simultaneously, the institutions are opening the door too. Without a need for cooperation and dialogue, Airbus could not have held 268 meetings.

[212] 'Indra | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/datacard/indra?rid=208351410839-33> accessed 29 June 2023.
[213] 'Leonardo S.p.A. | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/datacard/leonardo-spa?rid=02550382403-01> accessed 29 June 2023.
[214] 'THALES | Lobbyfacts' (*Lobbyfacts)* <https://www.lobbyfacts.eu/datacard/thales?rid=91711831031-23> accessed 29 June 2023.

Another example of intrinsic behaviour is the appointment of Thierry Breton as the current Commissioner for the Internal Market, who is entrusted with overseeing the implementation of the European Defence Fund and the Action Plan on Military Mobility. It is noteworthy that prior to his role as Commissioner, Thierry Breton held a prominent position as the CEO of Atos for more than a decade[215].

Frontex as a facilitator of defence and security industry key players.

Following this, lobbying efforts are not limited to the European Commission and the European Parliament. There is evidence to suggest that the same PMSCs regularly interact with Frontex, although these engagements lack transparency. In response to this issue, the European Parliament[216], in 2019, has called on the Agency to establish a lobby transparency system, which would include a transparency register and the disclosure of all meetings with third-party stakeholders. Currently, the system has been made available on the website[217]; however, the reports regarding these meetings cannot be accessed.

Therefore, I will rely on the analysis conducted by Myriam Douo, Luisa Izuzquiza[218], and Margarida Silva, based on the documents released in 2019, to examine the meetings held by Frontex with these actors.

Between 2017 and 2019, Frontex engaged with a total of 138 private entities[219]. Among these, 108 were companies, 10 were research centres or think tanks, 15 were universities, and one was an NGO (as shown in the table below).

Prominent European defence companies, which also happen to be recipients of research and innovation contracts, such as Airbus and Leonardo, had the highest number of meetings with Frontex, with each company being granted access five times. Notably, cybersecurity firm Gemalto participated in four meetings during this period. It is important to note that Gemalto has since been acquired by the defence conglomerate

[215] 'Thierry Breton' <https://commissioners.ec.europa.eu/thierry-breton_en> accessed 29 June 2023.
[216] Myriam Douo, Luisa Izuzquiza and Margarida Silva, 'Lobbying Fortress Europe The making of a border-industrial complex' (*Corporate Europe Observatory*, 5 February 2021) <https://corporateeurope.org/en/lobbying-fortress-europe> accessed 1 June 2023.
[217] 'Transparency Register' <https://frontex.europa.eu/transparency/transparency-register/> accessed 1 June 2023.
[218] Myriam Douo, Luisa Izuzquiza and Margarida Silva (n 193).
[219] Myriam Douo, Luisa Izuzquiza and Margarida Silva, 'Lobbying Fortress Europe (2017-2019) FINAL' (*Google Docs*) <https://docs.google.com/spreadsheets/d/1vpQLE3PNS-yAoMWw11xFZ6BSMmB3q3VmaYOX9wnVGIg/edit?usp=embed_facebook> accessed 29 June 2023.

Thales Group, which itself engaged in three meetings with Frontex. Remarkably, human rights organizations were noticeably absent from these meetings.

Given Frontex's role as an intermediary between industry and national authorities, it is clear that the EU agency has become an increasingly attractive target for lobbying by border control and defence corporations.

Name	Type of body	Number of meetings with Frontex
Airbus	Corporation	5
Thales	Corporation	5
Center for Research and Technology Hellas/Information Technology Institute (CERTH/ITI)	Research centre/ Think-thank	4
Gemalto	Corporation	4
NEC	Corporation	4
AIT Austrian Institute of Technology	Research centre/ Think-thank	3
Atos	Corporation	3
IDEMIA Identity and Security	Corporation	3
Jenetric GmgH	Corporation	3
Secante International GmbH	Corporation	3
Thales Group	Corporation	3
Vision-Box	Corporation	3

Figure 10: Actors and meetings conducted with Frontex. Created by Myriam Douo, Luisa Izuzquiza and Margarida Silva.

In actively positioning itself as the gateway between the industry and European border authorities, Frontex assumes a role that goes beyond agenda-setting and identifying key research themes for border control. It creates a ripple effect across all of Europe's border agencies, influencing the selection of industry actors and the adoption of preferred technologies[220].

The influence of Frontex extends further, as the European Union's funding for research and innovation in border control technologies has been consistently growing. In August 2020, Frontex entered into an agreement with the European Commission's Directorate-General for Migration and Home Affairs to enhance its participation in the

[220] Myriam Douo, Luisa Izuzquiza and Margarida Silva (n 193).

Framework Programmes for Research and Innovation, specifically Horizon 2020 and Horizon Europe[221].

4.3. Conclusions

In conclusion, EU-private partnerships, particularly in the realm of migration control and border management, have demonstrated a significant impact on policy-making processes and the implementation of technology-driven solutions. The involvement of Private Military and Security Companies and defence corporations in shaping EU policies has been well-documented, with lobbying activities and strong industry influence observed. The continuous engagement of these actors, both within the EU institutions and in collaboration with agencies like Frontex, highlights the complex interplay between public needs and private interests.

Moreover, the growing reliance on PMSCs and the delegation of migration control functions to these stakeholders raise concerns about accountability, responsibility, and transparency. The blurred lines between public and private entities, along with the self-serving nature of the border-industrial complex, perpetuate a cycle of mutual reinforcement. While both sides play a role in stimulating this complex, it is crucial to acknowledge the responsibility of those holding the financial resources.

Therefore, several recommendations can be made. First, it is essential to acknowledge the significance and relevance of lobbying rules within EU institutions. However, there is a need for comprehensive reform to ensure that these rules are uniformly applied across all institutions. Additionally, these rules should be expanded to cover EU agencies and bodies, as their activities also have implications for transparency and accountability. For instance, Frontex is currently required to disclose its meetings, but this information is not readily accessible to the general public through an online registry. To ensure transparency and accountability, it is imperative that this information is made available to the public.

In addition, and in concordance with the 18 months cooling off period foreseen for those who leave office in EU institutions, it is crucial to establish similar rule for those who will be nominated for Commissioner positions. This period would help mitigate potential conflicts of interest and ensure the independence and impartiality of

[221] Frontex, 'Introduction' (*Frontex)* <https://frontex.europa.eu/innovation/eu-research/introduction/> accessed 29 June 2023.

Commissioners in their new roles. Further research is needed to determine the optimal duration of the cooling-off period, considering the specific contexts and responsibilities of Commissioner positions.

These recommendations would symbolize efforts made to ensure a balanced approach that prioritizes fundamental rights, transparency, and democratic accountability. Stricter regulations, transparent lobbying practices, and enhanced mechanisms for assessing the fundamental rights impact of technologies are necessary to mitigate the potential negative consequences of EU-private partnerships. Ultimately, the pursuit of border management solutions should be guided by a comprehensive understanding of the implications for affected communities and the broader societal context. Migrants' rights can not be forgotten while financial and Lobbying interest rises to camouflage the perpetuation of stricter migration policies that foster securitization and defence.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the research findings confirm that the fundamental rights of migrants are indeed disregarded in EU-private partnerships focused on the development of migration management technologies.

The research reveals a significant increase in investment in migration management and border control, accompanied by the implementation of stricter policies at the EU. Migrants are often portrayed as a security concern, and technology is employed to address these perceived threats. Based on the conducted research, three key recommendations can be proposed.

Firstly, the proliferation of technologies in this field is expected to continue. The rapid advancements witnessed in the AI sector in recent months underscore this trend. Therefore, while innovation should be encouraged, it is crucial to establish clear rules to promote safe innovation. Fundamental rights should serve as a benchmark within the EU, and legal binding requirements should be in place to ensure that projects funded by EU funds do not lead to violations of fundamental rights, even unintentionally. Mandatory fundamental rights impact assessments should be conducted prior to and after the development and deployment of any migration management technology.

Secondly, the securitization of migration has given rise to a complex network of interests, creating a self-perpetuating cycle of public demand and private supply. As evident in the research, a consistent number of four state-owned enterprises - Thales, Airbus, Leonardo, and Indra Sistemas - have emerged as central actors, securing multiple project concessions under Horizon Europe, the European Defence Fund, and their predecessors. In the future, new stakeholders such as ATOS may also play significant roles. Simultaneously, these entities maintain a significant presence in lobbying efforts targeting the European Commission and Frontex. However, these institutions and agencies have also demonstrated a high level of openness towards these entities. Therefore, it is recommended to enhance transparency regulations regarding lobbying activities and expand their application to EU agencies. Disclosure of lobbying activities should be accessible to civil society, ensuring transparency and enabling public oversight.

Thirdly, it is essential to remember that migrants are the primary group affected by these technologies. When Member States, for instance, implement drone surveillance or AI-based emotion detection systems at borders, it ceases to be merely about research or innovation if fundamental rights of migrants are violated. Migrants must be given a voice and an active role in the development of these technologies. By adopting a holistic approach to their development, it is possible to create systems that improve migration management while respecting fundamental rights.

Now is the time for action, where technology can be harnessed to foster a more equitable world and avoid reproducing power hierarchies based on discriminatory preconceptions. The unique security and wealth characteristics of the EU region provide an opportunity to benefit from migration. Therefore, it is crucial to draw inspiration from the European Parliament's amendment proposal to the AI Act, listen to civil society, and establish a world where fundamental rights are upheld even in the presence of securitization. This is a moment for the European Union to lead and be a Union of solidarity.

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APPENDICES

Annex 1: Projects analyzed under FP7 and respective document disclosure.

Name	frameworkProgramme	Documents disclosed by consortium	Disclosed by third parties
ABC4EU	FP7	-	-
AMASS	FP7	-	-
ARGUS 3D	FP7	-	-
BEAT	FP7	-	-
CLOSEYE	FP7	-	-
EFFISEC	FP7	-	-
EU CISE 2020	FP7	-	-
EWISA	FP7	-	-
FASTPASS	FP7	-	-

FIDELITY	FP7	-	-
I2C	FP7	-	-
INGRESS	FP7	-	-
MOBILEPASS	FP7	-	-
OPARUS	FP7	-	-
PERSEUS	FP7	-	-
SCIIMS	FP7	-	-
SEABILLA	FP7	-	-
SECTRONIC	FP7	-	-
SMART	FP7	-	-
SNOOPY	FP7	-	-
SUNNY	FP7	-	-
TALOS	FP7	-	-
WIMAAS	FP7	-	-

Annex 2: Projects analyzed under Horizon Europe (approved until May 2023) and respective document disclosure.

Name	frameworkProgramme	Documents disclosed by consortium	Disclosed by third parties
ODYSSEUS	Horizon Europe	-	-
RITHMS	Horizon Europe	-	-
FLEXI-cross	Horizon Europe	-	-
EMERITUS	Horizon Europe	-	-
MELCHIOR	Horizon Europe	-	-
POLIIICE	Horizon Europe	-	-
iFLOWS	Horizon Europe	-	-
I-SEAMORE	Horizon Europe	-	-
TRANSCEND	Horizon Europe	-	-
Ceasefire	Horizon Europe	-	-
TENSOR	Horizon Europe	-	-
TENACITy	Horizon Europe	-	-
PERIVALLON	Horizon Europe	-	-
HARPOCRATES	Horizon Europe	-	-
VIGILANT	Horizon Europe	-	-
EURMARS	Horizon Europe	-	-
ATLANTIS	Horizon Europe	-	-