

‘Just’ Research

A Case Study of EU-funded Research with Experimental Artificial Intelligence
Technology for Border Control

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Abstract

The European Union (EU) enthusiastically funds the development of experimental artificial intelligence (AI) technologies for border control applications. However, the EU has received criticism for funding some of these projects, like the Horizon 2020 project iBorderCtrl. The researchers working on iBorderCtrl created an Automated Deception Detection System (ADDS). This system has been criticised by academics and activists for being based on faulty scientific assumptions and potentially acting in a discriminatory manner. The European Commission (EC) responded by saying that iBorderCtrl was just a research project that did not envision deployment. This thesis examines whether the experimentation with ADDS is problematic from a human rights perspective by investigating whether the justifications made for funding iBorderCtrl corresponds with fundamental rights principles and exploring legal and ethical concerns with researching with ADDS. Information is gathered through a desk-based literature review and semi-structured interviews with ten experts. Experts include the Data Protection Officer (DPO) of iBorderCtrl, two Frontex respondents, and a researcher from Statewatch among others. Using securitisation theory and science and technology studies (STS), the thesis suggests that iBorderCtrl was funded because migrants are perceived to be security threats which allows the development of extraordinary technologies to manage their movement. Moreover, fears of crisis, crime, and terrorism create a sense of urgency moving the threshold for acceptable technologies even further. These two reasons are joined by the EU's desire for innovation and implementation of AI technologies which erode the walls between experimentation and implementation. Thus, implying that iBorderCtrl is not 'just' as in only research. Furthermore, experimentation with ADDS is found to be problematic because it operates in a weakly regulated legal space. Fundamental rights are perceived as barriers. ADDS is considered a high-risk AI system, but not prohibited in the proposed AI Act. This weak legal regulation is arguably deliberate to facilitate for technology development. Moreover, a problematic ethical aspect of iBorderCtrl is that there is a differentiation made between migrants' rights and the rights of EU citizens, as migrants are presented as justifiable targets for high-risk AI systems. Consequently, persons in vulnerable situations are targeted by experimentation with undignified technologies. iBorderCtrl can therefore not be considered 'just' research as in lawful and ethical.

List of Abbreviations

ADDS	Automated Deception Detection System
AI	Artificial Intelligence
CSS	Critical Security Studies
DPO	Data Protection Officer
EC	European Commission
ECHR	European Convention on Human Rights
EDRi	European Digital Rights
EES	Entry/Exit System
EPRS	European Parliamentary Research Service
ETIAS	European Travel Information and Authorisation System
EU	European Union
Eurodac	European Dactyloscopy Database
Frontex	European Border and Coast Guard Agency
GDPR	General Data Protection Regulation
HLEG on AI	High-Level Expert Group on AI
H2020	Horizon 2020
iBorderCtrl	Intelligent Portable Border Control System
LED	Law Enforcement Directive
ML	Machine Learning
NGO	Non-Governmental Organization
PICUM	Platform for International Cooperation on Undocu- mented Migrants
REA	European Research Executive Agency
SIS	Schengen Information System
STS	Science and Technology Studies
TCN	Third-Country National
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
VIS	Visa Information System

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1 Introduction

The European Union (EU) enthusiastically promotes research and innovation with artificial intelligence (AI) technologies. Besides its investments in basic research through the European Research Council, the European Commission (EC) invests heavily in applied research programmes destined to solve the EU's big societal challenges.¹ Such research is deemed vital for advancing towards a prosperous future. Applied research seeks to provide solutions to defined issues, whereas basic research systematically investigates a topic to enhance knowledge on phenomena.² Even though the EU seeks to enhance prosperity, one EU-funded project has been criticised for doing the opposite. Digital rights activist Patrick Breyer claims that the EU has funded technology that is essentially “pseudo-scientific security hocus pocus” and that the future is a “dead surveillance society [which] is not worth living in”.³ The research project Breyer refers to is “iBorderCtrl”.

iBorderCtrl is short for Intelligent Portable Border Control System. The researchers developed an AI based lie detector to assist in controlling the entrance of non-EU-citizens to the Schengen area.⁴ Other academics and activists have argued that iBorderCtrl is based on false assumptions about lying, that it poses threats to fundamental rights⁵, and that it is a tool to efficiently keep refugees from having access to “Fortress Europe”.⁶ EU agencies on the other hand argue that iBorderCtrl was ‘just’ a research project because it is not used in practice and thus does not harm anyone. In 2020, the EC responded to criticism about iBorderCtrl and stated

¹ European Commission, "Research and innovation strategy 2020-2024," (n.d.). https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024_en.

² PhD Assistance, "What is the difference between academic research and professional research?," 2019, <https://www.phdassistance.com/blog/what-is-the-difference-between-academic-research-and-professional-research/>.

³ Patrick Breyer, "Transparency lawsuit against secret EU surveillance research: MEP Patrick Breyer achieves partial success in court," (2021). <https://www.patrick-breyer.de/en/transparency-lawsuit-against-secret-eu-surveillance-research-mep-patrick-breyer-achieves-partial-success-in-court/>.

⁴ CORDIS, "Intelligent Portable Border Control System," (2020). [https://cordis.europa.eu/project/id/700626](https://cordis.europa.eu/project/id/700626;).; Schengen area consist of the EU member states, except Bulgaria, Croatia, Cyprus, Ireland, and Romania. And includes the non-EU states Iceland, Norway, Switzerland, and Liechtenstein. Information retrieved from European Commission, "Schengen area," (n.d.). https://ec.europa.eu/home-affairs/policies/schengen-borders-and-visa/schengen-area_en.

⁵ Boffey, D., "EU Border 'Lie Detector' System Criticised as Pseudoscience," *The Guardian* 2018, <https://www.theguardian.com/world/2018/nov/02/eu-border-lie-detection-system-criticised-as-pseudoscience>; Kinchin, N., "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination," *Law in Context* 37, no. 3 (2021).

⁶ Ahmed, K. and Tondo, L., "Fortress Europe: the millions spent on military-grade tech to deter refugees," *The Guardian* 2021, <https://www.theguardian.com/global-development/2021/dec/06/fortress-europe-the-millions-spent-on-military-grade-tech-to-deter-refugees>.

that “iBorderCtrl was a research project and did not envisage the piloting or deployment of an actually working system”.⁷ However, why did the EU fund research with technology they never envisioned to use and is therefore experimentation with lie detectors for border control unproblematic? Can experimentations carried out in the iBorderCtrl project be considered ‘just’ in the sense of not producing anything and being lawful and ethical?

The EU establishes funding programmes to promote research and innovation. From 2014 to 2020, this was called Horizon 2020 (H2020). H2020 promised “more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market”.⁸ Implying that projects are funded with the aim to produce novel technologies and to implement those. EU’s member states allocated as much as €80 billion to H2020 projects, with additional private funding.⁹ One component of the research in H2020 is the development of AI technologies, where iBorderCtrl was one of its projects.

AI is technology that mimic human reasoning by reaching rational decisions based on information it is given. EU’s High-Level Expert Group (HLEG) on AI define AI as systems that are given a complex goal and collect, interpret, and process data, and based on this data decide on the best action to take to achieve the given goal.¹⁰ AI is an integral part of EU’s research agenda. The EC’s White Paper on AI establishes that the EU is committed to enable scientific breakthrough to preserve a leading position in AI and benefit from its potentials.¹¹ Dumbrava notes in his in-debt analysis on AI at EU borders that “AI technologies are powerful tools that will have significant consequences across many domains”.¹² The EU is no exception to this trend, and research projects drive such developments forward.

However, not everyone shares the enthusiastic embrace of researching with experimental AI, as they link it to potentials for control and surveillance. Ella Jakubowska from the

⁷ European Commission, "Parliamentary Questions: 30 March 2020. Answer given by Ms Johansson on behalf of the European Commission.," *E-000152/2020* (2020). https://www.europarl.europa.eu/doceo/document/E-9-2020-000152-ASW_EN.html.

⁸ European Commission, "Horizon 2020: Details of the EU funding programme which ended in 2020 and links to further information," (n.d.). <https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>.

⁹ European Union, "What is Horizon 2020?," (n.d.). <https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>.

¹⁰ High-Level Expert Group on Artificial Intelligence, *A definition of AI: Main capabilities and scientific disciplines*, European Commission (Brussels, 2018), https://ec.europa.eu/futurium/en/system/files/ged/ai_hleg_definition_of_ai_18_december_1.pdf, 6.

¹¹ European Commission, "White Paper On Artificial Intelligence - A European approach to excellence and trust," in *COM(2020) 65* (Brussels, 2020). https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en, 1.

¹² Dumbrava, C., *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues*, European Union (Brussels, 2021), 31.

non-governmental organization (NGO) European Digital Rights (EDRi) claims that there is “a broader trend of the EU pouring public money into dystopian and experimental surveillance projects, which treat human beings as lab rats”. She further argues that “[m]oney which could be used to help people is instead used to punish them, all while the surveillance industry makes vast profits selling false promises of magical technology that claims to fix complex structural issues”.¹³ An area that has received a lot of focus from AI’s potentials for control and surveillance is border control.¹⁴

H2020 has a work programme called ‘Secure Societies’ which includes border control and security.¹⁵ The aim of this research is to create innovations to tackle threats such as terrorism, cross-border crimes, and irregular migration.¹⁶ EU has a great desire for innovative AI to enhance border security because security threats are seen as “fast-evolving and complex, as well as often being cross-border in nature” which calls for newer technologies.¹⁷ The European Border and Coast Guard Agency (Frontex) have stated that they believe AI projects in H2020 are developing the future of border control.¹⁸ EU’s external borders, meaning the borders that make up Schengen, are already using technology. For instance, thermal cameras and carbon dioxide monitors are used to find people hiding in vehicles or along the borders attempting to enter Schengen.¹⁹ Furthermore, drones patrol the Mediterranean and send real-time updates to Frontex about boats that may contain migrants.²⁰ Evidently, European borders are increasingly digitalized.²¹ Testing and using technology can bring many benefits but employing technology for borders is particularly sensitive.

¹³ Emmanouilidou, L. and Fallon, K., "With drones and thermal cameras, Greek officials monitor refugees," *Al Jazeera* 2021, <https://www.aljazeera.com/news/2021/12/24/greece-pilots-high-tech-surveillance-system-in-refugee-camps>.

¹⁴ Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*, 10.

¹⁵ European Commission, "EU Research for a Secure Society: border and external security: 2018," (Luxembourg, 2019). <https://data.europa.eu/doi/10.2837/735512.>, 7.

¹⁶ European Commission, "From Research to Security Union," (Luxembourg, 2017). <https://data.europa.eu/doi/10.2837/89964>.

¹⁷ European Commission, "EU Research for a Secure Society: border and external security: 2018.", 4; European Commission, "From Research to Security Union."

¹⁸ Frontex, "EU Research," (2021). <https://frontex.europa.eu/future-of-border-control/eu-research/horizon-projects/?p=1>.

¹⁹ Ahmed and Tondo, "Fortress Europe: the millions spent on military-grade tech to deter refugees."

²⁰ Ibid.

²¹ Calvi, A., "Border management law in the European Union," in *BORDER CONTROL AND NEW TECHNOLOGIES: Addressing Integrated Impact Assessment*, ed. J. Peter Burgess and Dariusz Kloza (Brussel: Uitgeverij ASP, 2021)., 117.

Border agents have been found to use extreme measures to deter migrants from European borders. The United Nations Office for the Coordination of Humanitarian Affairs have found that law enforcement at borders have subjected migrants to inhumane treatments through violence, intimidation, and pushbacks. As a result of these actions, refugees are freezing to death at EU's doorstep. Twelve people were found dead at the Turkish border in February 2022 due to pushbacks by Greek authorities.²² Acts of 'pushbacks' is defined by the Special Rapporteur on the Human Rights of Migrants as "measures taken by States [...] which result in migrants, including asylum seekers, being summarily forced back, without an individual assessment of their human rights protection needs [...]".²³ Pushbacks violate the principle of non-refoulement which prohibits against sending a migrant back to a state where they may face persecution, enshrined in the Refugee Convention Art. 33.²⁴ Hence, H2020 projects aimed at border control are developed for a space where fundamental rights are already repeatedly violated. The potential risks are that newer AI technologies will further perpetuate violations of fundamental rights.

While the EU supports research with AI technologies, it also recognises the associated risks to fundamental rights.²⁵ Fundamental rights are established in the Charter of Fundamental Rights of the European Union (the Charter). The Charter was established "to strengthen the protection of fundamental rights in the light of changes in society, social progress and scientific and technological developments".²⁶ Thus, the EU recognises the necessity of safeguarding fundamental rights when faced with technological development. As is stated in EC's White Paper on AI, "[w]hile AI can help protect citizens' security and enable them to enjoy their fundamental rights, citizens also worry that AI can have unintended effects or even be used for malicious purposes".²⁷ It is essential to conduct AI research in accordance with fundamental rights.

²² OCHA, "Greece: Illegal pushbacks are dooming migrants to freeze to death," 2022, <https://reliefweb.int/report/greece/greece-illegal-pushbacks-are-dooming-migrants-freeze-death>.

²³ Morales, F. G., *Report on means to address the human rights impact of pushbacks of migrants on land and at sea* (United Nations Human Rights Council, 2021), <https://reliefweb.int/report/world/report-means-address-human-rights-impact-pushbacks-migrants-land-and-sea-report-special>., para. 34.

²⁴ United Nations, "Convention Relating to the Status of Refugees," in *A/CONF.2/108* (Geneva, 1951). https://treaties.un.org/pages/ViewDetailsII.aspx?src=TREATY&mtdsg_no=V-2&chapter=5&Temp=mtdsg2&clang=_en., Art. 33.

²⁵ European Commission, "White Paper On Artificial Intelligence - A European approach to excellence and trust.", 10-12.

²⁶ European Union, "Charter of Fundamental Rights of the European Union," in *2012/C 326/02* (2012). http://data.europa.eu/eli/treaty/char_2012/oj., preamble.

²⁷ European Commission, "White Paper On Artificial Intelligence - A European approach to excellence and trust.", 9.

This thesis elaborates on the concept of experimentation with AI for border control. The definition of experimentation used in this thesis is “a defined, structured process to test and validate the effect and effectiveness of new products or approaches”.²⁸ Experiments are indeed necessary to improve society by creating new knowledge and solutions. However, overlooking that experimentation reflects subjective aims, and that research produces ideas, perceptions, and basis for future research risks denying the impacts of ‘just’ research. Discussing research is especially important when the technology is being developed for spaces that already violate fundamental rights, in this case European borders. This thesis will discuss whether experimentation with AI for border control can be considered ‘just’ research by examining justifications and legal and ethical aspects of the case study iBorderCtrl. The following sections will lay forth the research question, the case study iBorderCtrl, a short note on terminology, and the structure of the thesis.

1.1 Research question

The research explores EU’s supported research programmes on AI for border control, by focusing on the case of iBorderCtrl, and asking:

Despite being framed as ‘just’ research, is EU-funded research of experimental artificial intelligence technology for border control, like iBorderCtrl, problematic, if so, why?

The thesis aims to contribute to the wider debate on fundamental rights and experimental AI. It seeks to further understandings on reasoning behind experimenting with AI for border control and explore its complicated relationship with fundamental rights at EU’s borders. This study is deemed important because human rights academics should be prepared for and participate in scholarly discussions related to technological advancements. An early debate around development and application of AI technologies and its implications for fundamental rights may assist in minimizing future violations.

²⁸ Sandvik, K. B., Jacobsen, K. L., and McDonald, S. M., "Do No Harm: A Taxonomy of The Challenges of Humanitarian Experimentation," *International Review of the Red Cross* 99, no. 904 (2017), <https://doi.org/10.1017/S181638311700042X>.

1.2 iBorderCtrl

The H2020 project iBorderCtrl ran from September 2016 to August 2019 with a €4.5 million contribution from the EU.²⁹ The vision was “to enable faster thorough border control for third country nationals [TCNs] crossing the borders of EU, with technologies that adopt the future development of the Schengen Border Management”.³⁰ iBorderCtrl aimed to increase efficiency and security of border controls, and reduce illegal crossings, cost, time, border agents’ workload, and human errors.³¹

One of the components of the iBorderCtrl project is based on the patented Automated Deception Detection System (ADDS) called the “Silent Talker”.³² Silent Talker was developed by researchers at the Manchester Metropolitan University who were enthusiastic about its ability to catch liars.³³ ADDS was found to be around 80% accurate; however, validation was performed using 32 actors and a majority of white European cis-gendered men.³⁴ Still, the researchers claimed that the system is appropriate for detecting deception and constitutes the future of border security.³⁵ This ADDS system has been referred to as a modern lie detector. However, Zoltán Székely, the Data Protection Officer (DPO) for iBorderCtrl noted that there is a big difference between detecting deception and detecting lying, and “it turned out that we absolutely failed to explain that”.³⁶ The use of lie detectors are heavily regulated and rarely used even by law enforcement and would therefore likely be dismissed for border control. Whereas deception detection is different because it indicates when someone is behaving differently than expected which suggests that the person might be hiding something. According to Székely, since iBorderCtrl failed to distinguish itself from the term ‘lie detector’, a false and harmful narrative, the project received a lot of criticism.³⁷ This thesis will not delve into a technical or

²⁹ European Commission, "EU Research for a Secure Society: border and external security: 2018.", 20; CORDIS, "Intelligent Portable Border Control System."

³⁰ CORDIS, "Intelligent Portable Border Control System.", Fact Sheet.

³¹ Ibid., Reporting.

³² O’Shea, J. et al., "Intelligent Deception Detection through Machine Based Interviewing," *2018 International Joint Conference on Neural Networks (IJCNN)* (2018), <https://doi.org/10.1109/IJCNN.2018.8489392>.

³³ Manchester Metropolitan University, "Catching Killers - MMU Technology on TV," (2014). <https://www.mmu.ac.uk/news-and-events/news/story/?id=2260>.

³⁴ O’Shea et al., "Intelligent Deception Detection through Machine Based Interviewing."; Hall, L. and Clapton, W., "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border.," *Internet Policy Review* 10, no. 4 (2021), <https://doi.org/10.14763/2021.4.1601>.

³⁵ O’Shea et al., "Intelligent Deception Detection through Machine Based Interviewing."

³⁶ Information retrieved from an interview with Zoltán Székely, the DPO of iBorderCtrl. Székely, Z., interview by author, 2022.

³⁷ "For instance, visit Boffey, "EU Border 'Lie Detector' System Criticised as Pseudoscience."

linguistic discussion, but it is important to be aware of the ambiguity. iBorderCtrl's ADDS based on the Silent Talker constituted the project's focal point.

iBorderCtrl consisted of both hardware and software technologies in a two-step procedure. The first step of iBorderCtrl required the traveller to pre-register before arriving at the border by logging on to a webpage and upload pictures of their passport, visa, and if necessary, proof of funds.³⁸ These documents would be linked to other databases such as the Schengen Information System (SIS) for verification of identity.³⁹ Then the traveller would be interviewed in "a short, automated, non-invasive interview with an avatar subject to lie detection".⁴⁰ Interestingly, the project's webpage calls the system a 'lie detector', which contradicts the DPO's statements. This automated deception detection interview would be conducted at home using a personal computer, mobile phone, or other device.⁴¹

The interview would start being greeting by a customized avatar looking like a border agent, matching the traveller's language, gender, and even ethnicity.⁴² A reporter from the non-profit organization The Intercept tested iBorderCtrl and got a brown-haired man in blue uniform on his screen, as seen in figure 1.

The avatar then asked questions such as: what is your surname, citizenship, and the purpose of your trip?⁴³ Simultaneously as the traveller answers, micro-gestures are analysed through the web camera to evaluate



Figure 1. iBorderCtrl Avatar. Retrieved from <https://streamble.com/iBorderCtrl/1/1/1/1.mp4> (accessed 03.03.2022)

whether the person is truthful or deceitful.⁴⁴ Micro-gestures are short-lived, unexpected facial expressions, such as half-closing an eyelid and opening it.⁴⁵ Using micro-expressions to detect

³⁸ Ibid.

³⁹ CORDIS, "Intelligent Portable Border Control System."

⁴⁰ Gallagher, R. and Jona, L., "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive," *The Intercept* (2019). <https://theintercept.com/2019/07/26/europe-border-control-ai-lie-detector/>.

⁴¹ Patrick Breyer, "Transparency lawsuit against secret EU surveillance research: MEP Patrick Breyer achieves partial success in court."

⁴² Boffey, "EU Border 'Lie Detector' System Criticised as Pseudoscience."

⁴³ Gallagher and Jona, "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive."

⁴⁴ Boffey, "EU Border 'Lie Detector' System Criticised as Pseudoscience."; Gallagher and Jona, "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive."

⁴⁵ O'Shea et al., "Intelligent Deception Detection through Machine Based Interviewing."

deception is based on the assumption that deceiving leads to stress and anxiety which can be detected through micro-expressions. The emotions that micro-expressions apparently indicate are anger, fear, disgust, sadness, happiness, contempt, and surprise, which are claimed by the researchers to be universal across cultures. ADDS is based on the conjunction of many different micro-expressions as one single micro expression is not sufficient.⁴⁶ The implication is that this machine learning (ML) device makes it impossible to know which micro-expressions are deemed deceitful. After the interview, the traveller would be given a QR-code to bring with them to the border.⁴⁷

The second step is when the traveller is evaluated by a border agent.⁴⁸ When the traveller arrives, their facial images, documents from pre-registration stage, and fingerprints are compared with information in other databases.⁴⁹ The border guard then uses a “portable, wireless connected iCROSS unit” which can be used at all land borders, to scan the QR-code from their interview.⁵⁰ The unit will provide a score that indicates whether the system found the traveller to be credible or deceitful. A deceitful traveller would be categorized as “medium risk” or “high risk” depending on how many questions were presumably falsely answered. It is up to the border agent to deny their entry or carry out further questioning.⁵¹

However, the traveller would not know the results of their interview. When a reporter from The Intercept tested iBorderCtrl and answered truthfully, the system concluded that the reporter had lied in four out of sixteen questions, thus deemed deceitful. The device suggested that the border agent carried out further checks. The Intercept had to request access under European privacy laws to obtain a copy of their reporter’s test.⁵² The reporter claimed that they told the truth and that the system therefore failed. However, perhaps the system realized that the person was a reporter and not a traveller, and in this sense, successfully reached the conclusion of deceit.

⁴⁶ Ibid.

⁴⁷ Gallagher and Jona, "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive."

⁴⁸ CORDIS, "Intelligent Portable Border Control System.", Fact Sheet.

⁴⁹ Boffey, "EU Border 'Lie Detector' System Criticised as Pseudoscience."; Gallagher and Jona, "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive."

⁵⁰ CORDIS, "Intelligent Portable Border Control System."

⁵¹ Gallagher and Jona, "We Tested Europe's New Lie Detector for Travelers - and Immediately Triggered a False Positive."

⁵² Ibid.

iBorderCtrl was supposed to be trialled at EU's busiest borders, Hungary, Greece, and Latvia.⁵³ However, iBorderCtrl never reached proper testing. The research team was on their way to receive ethical guidance from different universities when the Silent Talker was tested at an exhibition. The system ended up receiving negative reactions, and the Hungarian police put a full stop to wider public testing. The research team was not able to receive ethical guidance either. The only testing of iBorderCtrl ended up being by a voluntary queue at a border crossing point. Around 100 people tested the system; many of them were curious journalists.⁵⁴ Although, this constituted the end of further research and testing of iBorderCtrl, there is still a search to develop AI technologies for future border control to enhance efficiency, accuracy, and reduce workload.

1.3 Short note on terminology

Artificial Intelligence (AI) technology is the general term for technology which is taught to display intelligent behaviour through analysing its environment and taking a somewhat autonomous decision to reach a specific goal. AI systems are complex with multiple levels and technologies. Terms such as machine learning (ML), predictive analytics, and automated decision-making systems also refer to AI.⁵⁵ These systems rely on algorithms to mimic human reasoning. This thesis will use the term AI as the case study calls its technology an "intelligent [...] system".⁵⁶

This thesis refers to the specific AI technology developed in iBorderCtrl as an Automated Deception Detection System (ADDS) because that is the term provided by its developers.⁵⁷ However, the same technology is also referred to as emotion detection AI⁵⁸, automated credibility interview⁵⁹, and AI-powered lie detector.⁶⁰ These terms all refer to AI systems that attempt to identify human emotions to detect deception or lying.

⁵³ Boffey, "EU Border 'Lie Detector' System Criticised as Pseudoscience."

⁵⁴ Information retrieved from an interview with Zoltán Székely, the DPO of iBorderCtrl in an interview. Székely, interview.

⁵⁵ Molnar, P., "Technology on the margins: AI and global migration management from a human rights perspective," *Cambridge International Law Journal* 8, no. 2 (2019), <https://doi.org/10.4337/cilj.2019.02.07.>, 309.

⁵⁶ CORDIS, "Intelligent Portable Border Control System."

⁵⁷ O'Shea et al., "Intelligent Deception Detection through Machine Based Interviewing."

⁵⁸ Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*, 16-18.

⁵⁹ Patrick Breyer, "Transparency lawsuit against secret EU surveillance research: MEP Patrick Breyer achieves partial success in court."

⁶⁰ EDRI, "European court supports transparency in risky EU border tech experiments," (2021). <https://edri.org/our-work/european-court-supports-transparency-in-risky-eu-border-tech-experiments/>.

The term ‘migrants’ will be purposefully used as an umbrella term to include refugees and all other types of migrants. Legal disciplines often use terms such as refugees, asylum seekers, and migrants to distinguish people on the move based on their legal status and reason for migrating with specific rights afforded to each category. Refugee is a migrant who has special protection under the 1951 Refugee Convention. In some instances, refugees are portrayed as the only migrants that deserve protection since refugee status is afforded to those who have had to flee persecution or armed conflict. However, oftentimes the labels overlap.⁶¹ All migrants should be treated with respect regardless of their reason for migrating and status or lack thereof.⁶² Moreover, migrants need to access the EU in order to seek asylum or have their refugee status determined. Hence, in this thesis the term migrant encompasses all who migrate for whatever reason or with any status.

Fundamental rights will be used when referring to basic human rights, established in the Charter of Fundamental Rights of the European Union. The charter expresses the same laws that are established in international human rights law such as in the European Convention on Human Rights,⁶³ which means that fundamental rights are in essence human rights in the EU context.

1.4 Structure of the thesis

The thesis will begin with a description of the methodological approach in chapter 2. Then, I provide an overview of relevant literature on the topic in chapter 3. In chapter 4, two theoretical frameworks that will help shed light on the topic will be explained: securitisation theory and science and technology studies. The research question will be analysed and discussed in chapter 5. Firstly, I will critically assess the notion that iBorderCtrl is ‘just’ research by investigating justifications made for its experimentation. In the second section the notion that iBorderCtrl is a lawful and ethical research project will be investigated. Finally, chapter 6 will provide conclusions.

⁶¹ Carling, J., "Refugees are also Migrants. All Migrants Matter," *University of Oxford, Faculty of Law*, 03 September, 2015, <https://www.law.ox.ac.uk/research-subject-groups/centre-criminology/centreborder-criminologies/blog/2015/09/refugees-are-also>.

⁶² Ibid.

⁶³ European Union Agency for Fundamental Rights, "What are fundamental rights?," (n.d.). <https://fra.europa.eu/en/content/what-are-fundamental-rights>.

2 Methodology

The methodology chosen for this project is a qualitative single-case study. The following sections will describe the rationale for this methodological choice, and subsequently how data has been collected through desk-based literature review and expert interviews, how data was analysed thematically, and some ethical reflections of the project.

2.1 Qualitative single-case study

The H2020 research project iBorderCtrl is the case study in this thesis. The EU has been heavily criticised for funding iBorderCtrl, some even referring to it as a ‘modern lie detector’ for border control.⁶⁴ Journal articles about iBorderCtrl show that the debate is very polarized.⁶⁵ However, what remains unanswered is why the EU funded iBorderCtrl when lie detectors are considered unreliable, and why this experimentation was allowed to be carried out? Coming off this curiosity, this thesis provides a deep dive into the iBorderCtrl project.

Qualitative data is most fitting for this project because the research question is a “why-question”, thus searches for opinions, thoughts, and ideas. A case study was chosen because case studies investigate contemporary phenomena within a real-world context.⁶⁶ This thesis wants to see how iBorderCtrl relates to its context. Moreover, the aim of this thesis is to dig deep into experimentations with technology, and therefore chose to focus on a single case. The thesis thus provides inductive logic; that is knowledge based on in-depth exploration.⁶⁷ Insights produced in this thesis can contribute to a larger debate on AI experimentation.

2.2 Desk-based literature review

The scope of the literature review was themes such as AI for EU’s border control and iBorderCtrl, with a special eye out for experimentation, fundamental rights, legal regulations, and ethical considerations of migrants. Since iBorderCtrl ended in August 2019, academics

⁶⁴ Gandhi, S., "Europe’s Digital Border Management and its Implications for Asylum Seekers," (2021). <https://iohr.rightsobservatory.org/blog/europes-digital-border-management-and-its-implications-for-asylum-seekers/>; iBorderCtrl.no, "What is iBorderCtrl?," (n.d.). <https://iborderctrl.no/>.

⁶⁵ Hall and Clapton, "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border."; Sánchez-Monedero, J. and Dencik, L., "The Politics of Deceptive Borders: ‘Biomarkers of Deceit’ and The Case of iBorderCtrl," *Information, Communication & Society* 25, no. 3 (2020), <https://doi.org/10.1080/1369118X.2020.1792530>; Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 307.

⁶⁶ Yin, R. K., *Case Study Research and Applications: Design and Methods*, 6 ed. (Los Angeles: SAGE, 2018), 15.

⁶⁷ Nygaard, L. P., *Writing Your Master's Thesis: From A to Zen* (London: SAGE Publications, 2017), 27.

have had time to publish about it, providing a good foundation for desk research.⁶⁸ The literature consisted of grey literature such as NGO reports, reports by EU agencies, EU documents, news articles, and blogposts. Additionally, academic literature from journal articles and book chapters is included as well as legal regulations, proposals, and treaties. Due to the contemporary nature of the topic, most literature was from 2019 to today (2022). All literature was in English. These secondary sources gave an overview of iBorderCtrl and insights into current conversations.

2.3 Expert interviews

Secondary sources were combined with primary sources from expert interviews. Expert interviews were conducted to fill knowledge gaps and shed light on the topic from different angles. The contemporary nature of iBorderCtrl posed the opportunity to speak with people who have been involved.⁶⁹ Interviewing experts allowed asking critical questions, asking follow-up questions, and bringing their perspectives into a conversation. Giving outputs that are unavailable through secondary sources. Case study research is critiqued for sometimes being performed sloppy because of its loose definitions of methods.⁷⁰ In answer to this limitation, relevant stakeholders were distinguished into two groups. First, I refer to ‘insider experts’ as those directly involved with iBorderCtrl and secondly, ‘outsider experts’ are those indirectly involved due to their expertise and/or engagement with iBorderCtrl. These two groups became the target sample since they can provide insights from different angles. An important aspect when deciding on who to interview is to seek out rival explanations to increase validity.⁷¹ I intentionally pursued rival explanations by requesting interviews with both ‘insider’ and ‘outsider’ experts.

Interviewees were selected through purposive and snowball sampling. Experts were identified through their published literature, for example the author of an in-debt analysis on AI at EU borders written for the European Parliamentary Research Service (EPRS).⁷² I encountered other experts through the help of colleagues, which is how I got in contact with the data protection officer (DPO) for iBorderCtrl. Also, I asked the interviewees to put me in contact with other relevant actors. I ended up interviewing ten respondents. Four may be called ‘insiders’, these are two employees at Frontex’s research and innovation unit, the DPO of iBorderCtrl,

⁶⁸ CORDIS, "Intelligent Portable Border Control System."

⁶⁹ Yin, *Case Study Research and Applications: Design and Methods.*, 12.

⁷⁰ *Ibid.*, 2.

⁷¹ *Ibid.*, 33-34.

⁷² Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*

and a policy analyst at the EPRS, these were all men. The other six interviewees are considered ‘outsiders’. These include a researcher from Statewatch, digital rights activist, professor in computational legal theory, coordinator for the HLEG on AI, Deputy Director for the Platform for International Cooperation on Undocumented Migrants (PICUM), and a researcher on EU border control and digital (in)security. Two of these are men and four women. Appendix A provides short introductions to the interviewees.⁷³ Additionally, I briefly asked Jan Egeland, the General Secretary of the Norwegian Refugee Council (NRC) for a statement to use in this thesis. Interviews with purposefully selected informants was the most valuable approach for the research objective because “[a] smaller number of observations [...] may increase our understanding of a particular human rights problem”.⁷⁴

Eight interviews were conducted one-on-one. The interview with the two Frontex respondents was conducted together as a group interview. All interviews were conducted online using a video conference service. Before the interview, I sent an information letter explaining the objectives of the research and asked for their consent to join the project. All agreed to let me audio record the interview and present information from the interview alongside their name and occupation in the thesis, except the interviewees from Frontex who did not want to have their names included. The Frontex respondents also sent their confirmation to the information letter by e-mail and not by signing the letter. The contact person at Frontex assigned two of their researchers to the interview I requested, which made it into a group interview. The group dynamic in the interview with the Frontex respondents can have provided multiple perspectives, but also may have hampered the honesty of interviewees often achieved in one-on-one interviews. One-on-one interviews can usually generate feelings of trust and openness. However, contrary to my expectation, they were eager to speak about iBorderCtrl and became the first interview booked. One possible explanation for this eagerness is that Frontex wanted to clearly separate the agency from the heavily criticised iBorderCtrl project.

Throughout the project, measures were taken to ensure the respondents’ safety and privacy. Their names were stored in a password protected document which was kept separate from the interview recordings. Recordings and storage were done through the University of Oslo’s Dictaphone app “Nettskjema-diktafon” as encrypted audio files. The recordings will be deleted after the project ends. Throughout every step, all interviewees have been given the option to have their statements and recordings deleted or stay anonymous.

⁷³ For short introductions on the interviewees, see appendix A.

⁷⁴ Landman, T., *Studying Human Rights*, vol. 1 (Routledge, 2005), 3.

All interviews were performed in a semi-structured manner. Semi-structured interviews revolve around a topic while still being open for new inputs. This allows the interviewee to introduce new information that the interviewer might not have thought of which expands on the topic, making the data reliable. Therefore, this approach is a very common data collection method for human rights research encompassing complex topics. In fact, “semi-structured interviews and case studies prevail when human rights researchers are asked to select one or more methods applicable to their human rights studies”.⁷⁵ I used interview guides with suggested questions to stay on topic. The first two interviews indicated that the preliminary interview guide was too narrow because the respondents had difficulty answering the questions. These questions asked about iBorderCtrl’s effect on migrants and on the right to seek asylum. But since iBorderCtrl is not deployed on borders, I soon realized that conversations kept going back to underlying drivers for experimenting with technologies and problematic legal and ethical settings for experimentation. This resulted in a readjusted focus. The new interview guide asked questions such as “what do you think about EU’s investments in technological projects for border security?” and “can iBorderCtrl be considered “‘just’ research”?”. These questions acted as conversation starters.

2.4 Thematic data analysis

The interview data was analysed thematically. This process began with listening back at the interview recordings and making notes of direct quotes and evidence of opinions, ideas, and thoughts. Then I conducted a very general mapping exercise by colour-coding the statements into three categories. These were evidence relating to who researched iBorderCtrl, where they aimed to use iBorderCtrl, and what the technology of iBorderCtrl was. Doing this helped structure the information to look for an answer to the research question.

I found that the interviewees kept mentioning three main reasons for why the EU funded iBorderCtrl. These justifications were the desire to manage migration, the perceived threat of terrorism by third-country nationals (TCNs), and that EU wants to be a leading actor in AI innovation. I colour-coded the information again according to those three justifications. Moreover, the experts had multiple concerns with iBorderCtrl in relation to fundamental right. I created a new document where evidence of concerns relating to fundamental rights was merged based on similarity. Two concerns stood out, the lack of legal regulations and treating migrants

⁷⁵ Andreassen, B. A., Sano, H.-O., and McInerney-Lankford, S., "Human Rights Research Methods," in *Research Methods in Human Rights: A Handbook* (Cheltenham, Gloucestershire: Edward Elgar Publishing, 2017), 6.

as fair test subjects. I finished the analysis by colour-coding evidence of the mentioned concerns, to compare the information from interviews with the literature.

The interviewees have been given the opportunity to modify the statements used from their interviews. I sent an e-mail to each respondent informing them about the quotes and paraphrases from the interview that I intended to include in the thesis, even though only one of them specifically asked for this. I told them to get back to me if they wanted to make some changes and some respondents requested a few moderations. In this way, I made sure the information retrieved from the interview was correct and respected their integrity.

2.5 Ethical reflections

This section will lay out some ethical reflections regarding the research project at hand. As mentioned, the iBorderCtrl project has been heavily criticised by experts and activists in the media, academic articles, and reports. At the same time, the EU are launching follow-up research and innovation programmes with more funding for new projects although its agencies argue that iBorderCtrl was simply a research project. Strong opinions on both sides have created a polarized debate with a large divide between the two sides. Entering this conversation may be uncomfortable and even a bit risky. Even though most of the respondents already have positioned themselves in this debate through written reports, blogposts, and the like, being interviewed poses additional risks. When you are writing you have more control of the narrative and the text, while in interviews the interviewer can ask critical questions as well as interpreting and presenting the answers through the interviewer's perspective and aim.

As the respondents in this study were experts, they are not only being asked about their personal opinions, but their viewpoints as knowledgeable actors perhaps tied to an institution. This might cause complications for the respondents as they likely have personal opinions about the matter but must remain somewhat aligned with their institution's position. For instance, the two respondents from Frontex did not want their names included, and thus indirectly represent the agency. Whereas Dumbrava wanted to be represented as an individual expert and separate from the EPRS he is also affiliated with. Affiliation with an institution brings about challenges, not only for the respondent when deciding what to say and most importantly not say, but also for the interviewer. Interviewing someone who speaks on behalf of an agency means that their answers will be professional. The risk interviewees face is putting their name out there in a heated debate and for some including their name alongside their workplace in a polarized debate.

Since iBorderCtrl has been so heavily criticised, I assumed that many would be reluctant to be interviewed, especially the project's 'insiders'. In contrast to my assumption, the respondents seemed eager to talk about iBorderCtrl. Upon reflection, this might be due to the desire to control the narrative. For instance, my project could be a channel for the respondents to position themselves in the debate. I have attempted to keep the thesis balanced and fair. I acknowledged my position as somewhat critical to iBorderCtrl and emphasised my ability to learn and listen. In such a polarized debate, I viewed it important not to draw a strong line between those in favour and those against iBorderCtrl. I showed respect and understanding to all interviewees, which also has the positive effect of getting the most honest and representative answers.

3 Literature review

Scholars from multiple disciplines are investigating the intersections between technology experimentation, human rights, and migration. When it comes to this thesis' case study of ADDS, scholars from political science, law, and criminology generally agree that technologies based on AI are not able to detect deception. Barret has noted that facial expressions vary significantly across cultures, situations, and for a single person.⁷⁶ In addition, Arcas, Mitchell, and Todorov claim that new uses of physiognomy, the assumption that our physical attributes can describe psychological states such as deception, has revived scientific racism.⁷⁷ Amooore even argues that such technologies have been developed in an "algorithmic war" in response to the war on terror.⁷⁸ Within this debate, the project iBorderCtrl and its technology, ADDS, have been debated based on its ineffectiveness.

Kinchin discussed iBorderCtrl's effectiveness in her article "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination".⁷⁹ She evaluated the opportunities and challenges of using AI such as automated credibility interviews (another term for ADDS) to assist in refugee status determinations. She found that technologies, like iBorderCtrl, is based on the faulty assumption that consistency equals credibility. Ways of speaking is affected by personality, culture, and even trauma, meaning that it cannot always be correlated with deception nor truthfulness. Kinchin claims that ADDS is particularly inappropriate to use on migrants because of the cultural differences attached to facial cues.⁸⁰ Sánchez-Monedero and Dencik also noted that iBorderCtrl is based on inaccurate scientific assumptions that physiological traits relate to deception in their article "The Politics of Deceptive Borders: 'Biomarkers of Deceit' and the Case of iBorderCtrl".⁸¹

However, the creators of the Silent Talker, Rothwell, Bandar, O'Shea, and McLean, are enthusiastic about ADDS. They come from a cognitive psychology discipline and argue in their

⁷⁶ Barrett, L. F. et al., "Emotional Expressions Reconsidered: Challenges to Inferring Emotion From Human Facial Movements," *Psychological Science in the Public Interest* 20, no. 1 (2019), <https://doi.org/10.1177/1529100619832930>.

⁷⁷ Arcas, B. A. y., Mitchell, M., and Todorov, A., "Physiognomy's New Clothes," (2017). <https://medium.com/@blaisea/physiognomys-new-clothes-f2d4b59fdd6a>.

⁷⁸ Amooore, L., "Algorithmic War: Everyday Geographies of the War on Terror," *Antipode* 41, no. 1 (2009), <https://doi.org/10.1111/j.1467-8330.2008.00655.x>.

⁷⁹ Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

⁸⁰ Ibid.

⁸¹ Sánchez-Monedero and Dencik, "The Politics of Deceptive Borders: 'Biomarkers of Deceit' and The Case of iBorderCtrl.", 4-5.

paper “Silent Talker: A New Computer-Based System for the Analysis of Facial Cues to Deception” that there is a need for a system that can analyse non-verbal cues and their relationship as a modern form of lie detector.⁸² The Silent Talker, the technology used in iBorderCtrl, is described as an ideal tool for detecting deception because it evaluates several cues simultaneously and is not prone to fatigue as humans are.⁸³ Evidently, there is a debate around the accuracy of ADDS, but this is outside the scope of this thesis. Instead, this thesis seeks to answer why EU funded iBorderCtrl despite the technology being controversial and criticised.

Several academics from disciplines like law and political science have criticised iBorderCtrl and the increased testing of AI of its capacity to threaten the fundamental rights of persons in vulnerable situations. Hall and Clapton analysed iBorderCtrl through a gender and persons of colour perspective in “Programming the Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border”. In their view, the core assumptions of iBorderCtrl are inaccurate because the programming is gendered, sexualised, and racialised.⁸⁴ Furthermore, they refer to the same argument as made by Kinchin, that trauma affects behaviour. They add that marginalized persons have more trauma and thus the ADDS will not be able to accurately evaluate their deception, if it even can detect deception at all. This results in discriminations against LGBT persons, persons of colour, and asylum seekers. Lastly, they call for discussions on the premises underlying the development of these technologies, which is addressed in other journal articles.⁸⁵

In 2019, Petra Molnar placed the debate on AI experimentation within a migration and human rights domain through her article “Technology on the margins: AI and global migration management from a human rights perspective”.⁸⁶ She claims that international human rights law is a useful framework to recognise harms by technological experimentation because both are transnational. However, practice shows that technologies for migration management is developed and deployed in an environment with little regulation. Molnar argues that lack of reg-

⁸² Rothwell, J. et al., "Silent Talker: A New Computer-Based System for the Analysis of Facial Cues to Deception," *Applied Cognitive Psychology* 20 (2006), <https://doi.org/10.1002/acp.1204>, 757.

⁸³ *Ibid.*, 772-773.

⁸⁴ Hall and Clapton, "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border.."

⁸⁵ *Ibid.*

⁸⁶ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective."

ulation is deliberate. Kinchin also emphasises that questions remain about legality of AI technology for border control.⁸⁷ In Molnar's view, states differentiate between the rights of migrants and citizens, which makes migration management the perfect testing ground for experimenting with novel technologies.⁸⁸ Kinchin made an interesting similar point, that none of the AI technologies, including iBorderCtrl, are developed to actively benefit the refugee.⁸⁹ To ensure that experimentation does not infringe on human rights, Molnar calls for a regulatory regime that prohibits certain harmful technologies and provides access to redress.⁹⁰ This thesis furthers the conversation on problematic aspects of experimenting with ADDS in light of migrant's right and the potentials that this might be deliberate. While also including notions on 'otherness', perceived risks of migrants, and 'securitisation'.

Sánchez-Monedero and Dencik argue that the iBorderCtrl project represents "the race to AI" which is driven by a perceived political crisis in need of strong borders.⁹¹ Martins and Jumbert provide a similar notion on AI experimentation, claiming that migration management in the EU is becoming increasingly 'securitised' in their article "EU border technologies and the co-production of security 'problems' and 'solutions'".⁹² They note that the securitisation of migrants are created by an issue-framing that there is a lack of knowledge and information about migration which can be solved by technology. The use of militarized technologies further perpetuates this view of migrants' 'otherness'. Similarly, Hall and Clapton note that the gendered and racialised assumptions of iBorderCtrl reproduce discriminatory attitudes towards populations that are 'othered' and presumed to be 'risky'.⁹³ Martins and Jumbert conclude that

⁸⁷ Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

⁸⁸ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 306.

⁸⁹ Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

⁹⁰ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 329.

⁹¹ Sánchez-Monedero and Dencik, "The Politics of Deceptive Borders: 'Biomarkers of Deceit' and The Case of iBorderCtrl.", 14.

⁹² Martins, B. O. and Jumbert, M. G., "EU Border technologies and the co-production of security 'problems' and 'solutions'," *Journal of Ethnic and Migration Studies* (2020), <https://doi.org/10.1080/1369183X.2020.1851470>.

⁹³ Hall and Clapton, "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border..", 4.

the migrant must be de-securitized and re-humanized, and transparency in decision-making processes must increase to acknowledge the coproduction of security problems and solutions.⁹⁴

Sandvik, Jacobsen, and McDonald refer to similar trends of defining harms and risks for experimentations with humanitarian technologies. As laid forth in their article “Do no harm: A taxonomy of the challenges of humanitarian experimentation”, experimentations with humanitarian technologies are not regarded as problematic, but underpin illegal and unethical attitudes.⁹⁵ They note that few discussions have tackled the relationship between innovation and humanitarian principles. Lastly, they lay forth how constructions of emergency and urgency drives technological developments, a notion this thesis will discuss. In addition, Hall and Clapton argue that such technologies reinforce non-entree practices, making it more difficult to access the EU, also speaking to the reasons behind experimenting with iBorderCtrl.⁹⁶ This thesis aims to conduct a similar type of investigation as done by Sandvik, Jacobsen, and McDonald into the iBorderCtrl project based on new empirical data from interviews.

⁹⁴ Martins and Jumbert, "EU Border technologies and the co-production of security 'problems' and 'solutions' .", 15.

⁹⁵ Sandvik, Jacobsen, and McDonald, "Do No Harm: A Taxonomy of The Challenges of Humanitarian Experimentation."

⁹⁶ Hall and Clapton, "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border..", 2.

4 Theoretical framework

This thesis benefits from the theory of securitisation and Science and Technology Studies (STS). Securitisation theory has its roots in Critical Security Studies (CSS). CSS is a research tradition that critically assesses security discourses by reflecting on who defines security, what security is, who to secure, and secure from what. Browning and McDonald argue that these critiques occur in three fundamental ways. First is the critique of the normative assumptions underlying a traditional perspective of security. Traditionally, the state is seen as the object in need of security and force is used to protect the state. Second is the political effects of security and the corresponding use of force. Last is the ethics of security, as in how something is deemed to need protection while other objectives are deemed threats.⁹⁷ The debate on whether threats are objective (an actual threat to security) or subjective (the perception of a threat) received a fresh take from the emergence of securitisation theory. With this shift, academics turned away from discussing whether a threat is real or not, to instead looking at how certain issues are socially constructed and framed as a security concern.

Securitisation theory has close ties with social constructivism, recognising that components of our society are socially constructed.⁹⁸ In addition, securitisation theory is closely related to speech act theory that contends that the meaning of words lies in the way it is used when performing speech acts.⁹⁹ Securitisation is the act when someone claims that something, for instance a group of people, issue, trend, or object, is a threat, and that this threat must be dealt with through extraordinary countermeasures, and lastly, convinces their audience that countering the threat by breaking some rules is justified.¹⁰⁰ Scholars have further understood the notion of securitisation as a move that entails and is influenced by power. The securitising actor is often already in a position of power, for instance by being government authorities. They hold power over their audience and the securitised objects through the ability to announce something as a threat. Announcing threats may have enormous consequences for society. Earlier

⁹⁷ Browning, C. S. and McDonald, M., "The future of critical security studies: Ethics and the politics of security," *European Journal of International Relations* 19, no. 2 (2011), <https://doi.org/10.1177/1354066111419538>, 236.

⁹⁸ Balzacq, T., Léonard, S., and Ruzicka, J., "'Securitization' Revisited: Theory and Cases," *International Relations* 30, no. 4 (2016), <https://doi.org/10.1177/0047117815596590>, 496.

⁹⁹ Britannica, T. E. o. E., "Speech Act Theory," in *Britannica Encyclopaedia* (01.11.2013). <https://www.britannica.com/topic/speech-act-theory>.

¹⁰⁰ Munster, R. v., "Securitization," *Oxford Bibliographies* (2012), <https://doi.org/10.1093/OBO/9780199743292-0091>.

literature focused on the elite's power to securitise an issue, where later literature showed how the audience themselves also hold power to reject or accept an issue as securitised.¹⁰¹

Securitisation theory has often been applied to the topic of migration in the EU.¹⁰² Scholars have found that migration has been securitised in the EU by being perceived as a "cultural threat, socio-economic threat and a more traditional, internal security threat".¹⁰³ Considerations of migrants as cultural threats entails the risk that migrants may alter the culture of the country they enter. Socio-economic threat is the risk that migrants may negatively influence the economy or society in other ways. Lastly, migrants as internal security threats are the risks that they may commit crimes.¹⁰⁴ Whether a migrant is considered a threat is played out along racialised, gendered, and classist lines. Adding to these accounts, Bigo argues that securitisation not only occurs through speech acts, but also administrative practices, meaning policy and management of threats.¹⁰⁵ For example, receiving migrants to prison-like facilities may enhance a securitised view of people on the move even though the government has not uttered a securitised statement. In this way, administrative processes may reflect a securitised conception of migrants. These notions inspired Huysmans' work on securitisation and technological development and application in the EU.¹⁰⁶ He argues that modern technologies binds freedom and security in an entangled relationship. Dangers are externalised through border technologies that allow free movement within Schengen, which again is monitored by internal security technologies.

Science and Technology Studies (STS) also plays a vital role for reflections in this research. STS is an interdisciplinary study of the origins, dynamics, and consequences to our society by science and technology.¹⁰⁷ It counters the notion of technological determinism,

¹⁰¹ Balzacq, Léonard, and Ruzicka, "'Securitization' Revisited: Theory and Cases.", 501-502.

¹⁰² Ibid., 508.

¹⁰³ Ibid., 509.

¹⁰⁴ Ibid., 509.

¹⁰⁵ Bigo, D., "Security and Immigration: Toward a Critique of the Governmentality of Unease " *Alternatives* 27 (2002), <https://doi.org/10.1177/03043754020270S105>., 65-66.

¹⁰⁶ Huysmans, J., "A Foucaultian view on spill-over: freedom and security in the EU," *Journal of International Relations and Development* 7 (2004), <https://doi.org/10.1057/palgrave.jird.1800018>.

¹⁰⁷ Hackett, E. J. et al., "Introduction," in *The Handbook of science and technology studies*, ed. Edward J. Hackett et al. (Cambridge: MIT Press, 2007)., 1.

which is the view that technologies are developed outside of societal influences, and that technological advancements are the determining factors for societal change.¹⁰⁸ Technological determinism can encompass either an optimistic or a pessimistic view. The optimists assume that technologies will solve the issues it sets out to tackle, whereas pessimists view the technologies as taking away our individualism by being an alienating force.¹⁰⁹ Research from STS have revealed that science and innovations are not just forces for societal benefit, and that they simultaneously can contribute to social exclusions, inequality, and destruction.¹¹⁰ Even though STS has discussed and presented the weaknesses of a technological deterministic viewpoint for many years, the belief is still visible in politics and policies today. In fact, arguments for the advantages of new technologies often refer to technologies as passive instruments that has the sole effect of efficiency and objectivity.¹¹¹

However, scholars argue against the objectivity of technology, flagging that technology contains political components and can represent security purposes. For instance, Evans, Leese, and Rychnovská claim that the normative and political aspects of science and technology and its interconnectedness with security was visible in the aftermath of the terrorist attacks in New York on September 11th, 2001. The responses to the attacks came from a desire to enhance national security, and all the technologies that were developed in this fight were highly political.¹¹² In this study, technology and science will be understood through a critical STS perspective, meaning that social interests are reflected in science and technology, while at the same time science and technology form and develop society.¹¹³

In human rights studies, science and technology has long been viewed through an STS perspective. In the book *Human Rights and Scientific and Technological Development* from 1990, scholar Weeramantry at the United Nations University takes a critical STS perspective by explaining how technology are tools for human's desires. He supports the "philosophy that

¹⁰⁸ Wyatt, S., "Technological Determinism is Dead; Long Live Technological Determinism," in *The Handbook of science and technology studies*, ed. Edward J. Hackett et al. (Cambridge: MIT Press, 2007), 168.

¹⁰⁹ Casiraghi, S., Burgess, J. P., and Lidén, K., "Ethics and border control technologies," in *BORDER CONTROL AND NEW TECHNOLOGIES: Addressing Integrated Impact Assessment*, ed. J. Peter Burgess and Dariusz Kloza (Brussel: Uitgeverij ASP, 2021), 86-87.

¹¹⁰ Miller, C. A., "Engaging with Societal Challenges," in *The Handbook of Science and Technology Studies*, ed. Ulrike Felt et al. (Cambridge: The MIT Press, 2017), 909.

¹¹¹ Jacobsen, K. L., *The politics of Humanitarian Technology: Good intentions, unintended consequences and insecurity* (New York, USA: Routledge, 2015), 3.

¹¹² Evans, S. W., Leese, M., and Rychnovská, D., "Science, Technology, Security: Towards Critical Collaboration," *Social Studies of Science* 51, no. 2 (2021), <https://doi.org/10.1177/0306312720953515>, 190.

¹¹³ Law, J., "STS as Method," in *The Handbook of Science and Technology Studies*, ed. Ulrike Felt et al. (Cambridge: The MIT Press, 2017), 31-32.

science is humanity's servant and not its master, and that the users of science can and should play a role in shaping its directions and using its products".¹¹⁴ In essence what this means from a human rights perspective is that humans can and should control science and technology. Therefore, technologies should be developed for the improvement of human rights or at least be compatible with human rights. Literature in the human rights discipline has tended to focus on how innovations violate human rights, both legally and in principle. In addition, it is important to mention that the funding of research gives power to the funders to direct science and technology and "every new technology gives new power to its controllers".¹¹⁵ The last point Weeramantry makes is that the affluent parts of the world are usually the beneficiaries of science and technology, which means that innovations serve their needs. Technologies can be drivers for good, and from a human rights perspective, the best possible outcomes are to ensure and protect human rights. For a fruitful inquiry about border security technologies and fundamental rights, the research at hand will take on a merged perspective of securitisation theory, STS, and human rights.

¹¹⁴ Weeramantry, C. G., "The Problems, the Project, and the Prognosis," in *Human Rights and Scientific and Technological Development*, ed. C. G. Weeramantry (Tokyo, Japan: United Nations University Press, 1990), 12.

¹¹⁵ *Ibid.*, 13.

5 Critical inquiry of iBorderCtrl

The EC and the Frontex respondents interviewed for this thesis both state that iBorderCtrl was only research, thus does not pose any real threat to fundamental rights. According to the EC, “iBorderCtrl was a research project and did not envisage the piloting or deployment of an actually working system”.¹¹⁶ In a similar manner, the interviewees from Frontex noted that “we have to remember it [iBorderCtrl] was a research and innovation action”.¹¹⁷ Consequently, neither the EC nor the Frontex interviewees regard iBorderCtrl as experimental in a problematic sense. However, digital rights activist Matthias Monroy claims that they equally contradict themselves by continuing to fund and encourage similar research.¹¹⁸ Thus, claiming that iBorderCtrl is just research raises multiple questions. What were the justifications for funding millions to experiment with ADDS in iBorderCtrl if they never envisioned to use it? Are there any problematic aspects of experimenting with AI deception technology for border control purposes, even if it is never used? These are the questions critically investigated in this chapter through the research question:

Despite being framed as ‘just’ research, is EU-funded research of experimental artificial intelligence technology for border control, like iBorderCtrl, problematic, if so, why?

The following discussion is divided in two subtopics. First, an analysis is put forth concerning the justifications made for funding iBorderCtrl. This is presented in three sections; research for migration management purposes, research to protect the EU from crime and terrorism, and research for the sake of innovation and implementation of new technologies. Secondly, legal and ethical aspects of iBorderCtrl’s experimentation with ADDS are examined. These are presented by first analysing the legal regulation surrounding iBorderCtrl and second, ethics of the potentiality that migrants are treated as rights-optional test subjects.

5.1 Justifications for funding iBorderCtrl

This subchapter critically examines the underlying perceptions that may have prompted iBorderCtrl. Resulting in a critical inquiry of whether the justifications for funding iBorderCtrl

¹¹⁶ European Commission, "Parliamentary Questions: 30 March 2020. Answer given by Ms Johansson on behalf of the European Commission.."

¹¹⁷ Frontex interviewees, interview by author, 2022.

¹¹⁸ Monroy, M., "EU project iBorderCtrl: Is the lie detector coming or not?," (2021). <https://digit.site36.net/2021/04/26/eu-project-iborderctrl-is-the-lie-detector-coming-or-not/>.

may have unintended consequences that contradict fundamental rights principles. The three main justifications for funding iBorderCtrl make up the structure of the following sections, namely, to manage migration, to combat crisis, crime, and terrorism, and wanting innovation and implementation of AI technologies.

5.1.1 Research for migration management

iBorderCtrl was funded by the EU based on its possibility to assist in managing migration. The DPO for iBorderCtrl, Zoltán Székely, explained that the aim of iBorderCtrl was to create a tool to simplify the control process on Schengen's borders.¹¹⁹ The project's webpage notes that the project "envisages to enable faster thorough border control for third country nationals crossing the borders of EU, with technologies that adopt the future development of the Schengen Border Management".¹²⁰ This purposeful aim arguably contradicts statements made by the EC that iBorderCtrl was merely a research project to test a technology.¹²¹ Developing innovative technologies with the aims of controlling the flow of migrants is nothing new. In fact, iBorderCtrl is rooted in the assumption that EU needs more technology to control migrants.

Third country nationals (TCNs) were the targets of iBorderCtrl and has a history of being at the receiving end of new technology in the name of 'security'. In 1995 when the Schengen Agreement was implemented, the EU established their first database for external border control, the Schengen Information System (SIS).¹²² SIS was employed to regulate migration flow and marked the beginning of EU's digitalisation of migration management.¹²³ Subsequently in 2003, asylum seekers became the first group to have their fingerprints collected and

¹¹⁹ Székely, interview.

¹²⁰ CORDIS, "Intelligent Portable Border Control System."

¹²¹ European Commission, "Parliamentary Questions: 30 March 2020. Answer given by Ms Johansson on behalf of the European Commission.."

¹²² European Commission, "Schengen area."

¹²³ Besters, M. and Brom, F. W. A., "'Greedy' Information Technology: The Digitalization of the European Migration Policy," *European Journal of Migration and Law* 12 (2010), <https://doi.org/10.1163/157181610X535782>, 457.

stored in the European Dactyloscopy Database (Eurodac).¹²⁴ EU's desire for information continued, and in 2011 came the Visa Information System (VIS).¹²⁵ These three systems complement each other by collecting information about different types of migrants.¹²⁶ This trend shows a great trust in technology, and critics claim that EU treats security technology as the ultimate solution to any threat.¹²⁷ This viewpoint is compatible with observations after the 'migration crisis' in 2015 when the EU sought even more technological solutions.

After this crisis, the EU felt the need for more information about migrants. Hence, they announced the "Communication on Stronger and Smarter Information Systems for Borders and Security" aimed at filling knowledge gaps on migration.¹²⁸ The underlying assumption is that if we can know everything about migration, then we can control it.¹²⁹ SIS, Eurodac, and VIS have one 'gap', not documenting overstayers, which has prompted the creation of a new data collection system, the Entry/Exit System (EES).¹³⁰ Interestingly, the EES was proposed in the 2008 'Smart Borders Package', but was criticised for being too intrusive and therefore was not implemented. Guild, Carrera, and Geyer argue that EES would unnecessarily subject travellers to state suspicion.¹³¹ After the 'migration crisis' in 2015, the EU desired to introduce new systems, including the EES.¹³² Implementation of EES in September 2022 will start keeping records of the entry, exit, and refused entry of TCNs coming for a short stay.¹³³ The auxiliary device developed in iBorderCtrl was intended to support border guards when using the EES. Thus, connecting the project to responses to the migrant crisis.¹³⁴ Furthermore, when asking the

¹²⁴ European Commission, "From Research to Security Union.", 10; Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*, 5.

¹²⁵ European Commission, "Visa Information System (VIS)," (n.d.). https://ec.europa.eu/home-affairs/policies/schengen-borders-and-visa/visa-information-system_en.

¹²⁶ Besters and Brom, "'Greedy' Information Technology: The Digitalization of the European Migration Policy.", 459.

¹²⁷ *Ibid.*, 456.

¹²⁸ European Commission, "Stronger and Smarter Information Systems for Borders and Security," in *COM(2016) 205 final* (Brussels, 11.06.2022 2016). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A205%3AFIN.>, 3.

¹²⁹ Besters and Brom, "'Greedy' Information Technology: The Digitalization of the European Migration Policy.", 460.

¹³⁰ European Commission, "Stronger and Smarter Information Systems for Borders and Security.", 12.

¹³¹ Guild, E., Carrera, S., and Geyer, F., "The Commission's New Border Package Does it take us one step closer to a 'cyber-fortress Europe'?", 154 (2008). <https://www.ceps.eu/ceps-publications/the-commissions-new-border-package-does-it-take-us-one-step-closer-to-a-cyber-fortress-europe/>, 4.

¹³² Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*, 5.

¹³³ European Commission, "Entry/Exit System (EES)," (n.d.). https://ec.europa.eu/home-affairs/policies/schengen-borders-and-visa/smart-borders/entry-exit-system_en.

¹³⁴ CORDIS, "Intelligent Portable Border Control System."

Frontex interviewees about reasons behind funding iBorderCtrl, they emphasised that border guards must be equipped to handle migratory crises.¹³⁵ Evidently, technology experimentations and uses are justified for the purpose of managing migration.¹³⁶ With the emergence of AI technologies, the same trends are carried on in newer forms.

Borders are highly technological spaces where travellers are subjected to automated decision making. Automatic processing on borders can be beneficial for all parties if it corresponds with fundamental rights principles. As pointed out by the Frontex respondents, AI technologies are already used at borders and even make decisions about entrance when we scan our passports.¹³⁷ The EU wants to further utilize AI's opportunities to manage borders and thus invest in research for this purpose.¹³⁸ H2020 included the work programme "Secure societies – Protecting freedom and security of Europe and its citizens" with the subtopic "Border and External Security"¹³⁹, which encompassed the iBorderCtrl project.¹⁴⁰ It becomes evident that security perceptions are coupled with the potentials of newer AI technologies. So, with AI and security interlinked and aimed at managing migration, what understandings about migrants are at the foundation?

Migration management in the EU have been criticised for treating migrants as potential security threats.¹⁴¹ Securitisation theory establishes that security is socially constructed. Martins and Jumbert argue that the EU's issue-framing, that technologies can solve migration, is based on a securitised notion of migrants. Migrants are viewed as securitised by being *a risk* to Europe's security.¹⁴² The same is laid forth by Hall and Clapton who note that perceptions of risks are based on imaginations of the future and is not objective.¹⁴³ Accordingly, migrants are the targets of AI border technologies because they are framed as threats to security, and not because

¹³⁵ Frontex interviewees, interview.

¹³⁶ Molnar, P., *Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up* (EDRi and Refugee Law Lab, 2020), <https://edri.org/wp-content/uploads/2020/11/Technological-Testing-Grounds.pdf>.

¹³⁷ Frontex interviewees, interview.

¹³⁸ Deloitte, *Opportunities and Challenges for the Use of Artificial Intelligence in Border Control, Migration and Security*, European Commission (Brussels, 2020).

¹³⁹ European Commission, "Horizon 2020: Work Programme 2018-2020: 14. Secure societies - Protecting freedom and security of Europe and its citizens," in *Decision C(2020)1862* (2020), 57.

¹⁴⁰ CORDIS, "Intelligent Portable Border Control System."

¹⁴¹ Molnar, *Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up*, 19.

¹⁴² Martins and Jumbert, "EU Border technologies and the co-production of security 'problems' and 'solutions'." 4.

¹⁴³ Hall and Clapton, "Programming The Machine: Gender, Race, Sexuality, AI, and The Construction of Credibility and Deceit at The Border.", 6.

they necessarily are. This goes for everything that is regarded a ‘security threat’. This reality is visible in the EU’s data collection systems for border control that have targeted migrants since the beginning of SIS. Moreover, the EU claim in their H2020 work programme ‘Secure Societies’ that AI comprise solutions to deal “with migration flows to avoid tensions and violence”.¹⁴⁴ The position of power the EU holds also gives the organization power to shape the measures needed to protect from the security threat that they defined. Framing something as a ‘risk’ can move the threshold of acceptable measures and allow the development of extraordinary technologies.

Securitisation of migrants may lead to funding experimental AI that would otherwise be deemed principally wrong. Critics of iBorderCtrl have called the project “a scenario from a dystopian novel”.¹⁴⁵ Burkhard Schafer, professor in computational legal theory at the University of Edinburgh, makes the point that before experimenting with ADDS, researchers should first establish whether deception is an issue and question the framing of migrants as ‘potential’ terrorists. An important component of securitisation theory is that the audience hold power to reject or accept a defined security threat. Schafer does not entirely reject, but questions the assumptions made about security in iBorderCtrl.¹⁴⁶ Alyna Smith, the Director of PICUM, is more critical. She claims that the very idea of using ADDS on every TCN is extraordinary because it is simply not proportionate to the threats posed by migrants.¹⁴⁷ Securitisation theory suggest that when a subject has been sufficiently securitised, it will receive disproportionate measures, which is what Smith argues is the case for iBorderCtrl. Proportionality is one of the EU’s fundamental rights principles established in the Charter.¹⁴⁸ It could be argued that even experimentations should be proportionate to its aim. ADDS for migration management in iBorderCtrl may be an example of the opposite which corresponds with Majcher’s finding that the principle of proportionality is often overlooked when evaluating migration issues.¹⁴⁹ Irregular migrants are particularly securitised.

¹⁴⁴ European Commission, "Horizon 2020: Work Programme 2018-2020: 14. Secure societies - Protecting freedom and security of Europe and its citizens.", 55.

¹⁴⁵ Varghese, S., "The science behind the EU's creepy new border tech is totally flawed," *Wired UK* 2018, <https://www.wired.co.uk/article/border-control-technology-biometrics>.

¹⁴⁶ Schafer, B., interview by author, 2022.

¹⁴⁷ Smith, A., interview by author, 2022.

¹⁴⁸ European Union, "Charter of Fundamental Rights of the European Union.", Art. 49 & 52.

¹⁴⁹ Majcher, I., "The Schengen-wide entry ban: how are noncitizens’ personal data protected?," *Journal of Ethnic and Migration Studies* 48, no. 8 (2022), <https://doi.org/10.1080/1369183X.2020.1796279>.

Irregular migrants are those who enter and/or stay within a country without papers that formally prove that they are allowed to enter/stay.¹⁵⁰ iBorderCtrl specifically targets irregular migration because preventing “illegal crossings” is one of the project’s main aims.¹⁵¹ Székely said that iBorderCtrl stems from the desire to manage legal and illegal migration.¹⁵² Referring to irregular migrants as arriving through ‘illegal crossings’ does not consider that oftentimes the only way to migrate and seek asylum is through illegalized pathways.¹⁵³ Although irregular migration must be ‘managed’ and technology poses opportunities in this regard, the technology experimented with should still be proportionate to its goal. According to Smith, the EU paints a false picture of the risks posed by irregular migrants.¹⁵⁴ Smith argues that numbers of irregular migrants are extremely small; around 2 to 4 million in Europe. In her view, “it is just a completely outsized attention and a kind of attention that is very much in a negative way”.¹⁵⁵ Thus, irregular migrants are specifically targeted in iBorderCtrl, and critics argue that this aim is disproportionate to the related security threats.

Research with technologies to manage migration may treat technology as a mere instrument when in fact it shapes and affects our perceptions and responses. Technologies reflect subjective assumptions. For example, securitisation is embedded in the knowledge behind EU’s border technology.¹⁵⁶ Migrants are perceived as potentially deceitful, whereas EU-citizens are not. Science and technology studies (STS) claim that technology’s subjectiveness must be acknowledged, especially in relation to security measures. This acknowledgement seems to be lacking in iBorderCtrl. Costica Dumbrava, Policy Analyst at the European Parliamentary Research Service (EPRS) highlights that there is a false sense of technology’s objectivity. He emphasises that technologies are never ‘just’ technologies because they represent and further perpetuate existing ideas and systems.¹⁵⁷ Kinchin makes a similar claim as she argues that iBorderCtrl is an example of technologies that are being developed without considerations to

¹⁵⁰ International Organization for Migration, "Key migration terms," (n.d.). <https://www.iom.int/key-migration-terms>.

¹⁵¹ CORDIS, "Intelligent Portable Border Control System.", Reporting.

¹⁵² Székely, interview.

¹⁵³ Genova, N. D. and Roy, A., "Practices of Illegalisation," *Antipode* 52, no. 4 (2019), <https://doi.org/10.1111/anti.12602>.

¹⁵⁴ Smith, interview.

¹⁵⁵ Ibid.

¹⁵⁶ Martins and Jumbert, "EU Border technologies and the co-production of security ‘problems’ and ‘solutions’.", 3.

¹⁵⁷ Dumbrava, *Artificial Intelligence at EU Borders: Overview of Applications and Key Issues.*, 32.

actively benefit the target group.¹⁵⁸ These inquiries suggest that there is a need to incorporate an STS approach in EU's technology experimentations, to acknowledge the questionable assumptions about security underlying iBorderCtrl. In conclusion, iBorderCtrl is problematic because the project encompasses a securitised view of migrants assuming that they must be controlled with extraordinary technology, which comes in conflict with the principle of proportionality and an STS approach.

5.1.2 Research to protect the EU from crises, crime, and terrorism

The second justification for funding iBorderCtrl was its potential for supporting the combat against crisis, crime, and terrorism. The EU lists combatting terrorism as one of its top priorities.¹⁵⁹ Subsequently, research in the H2020 Secure Societies programme aims to develop efficient technological solutions to control the flow of people across Schengen's external borders.¹⁶⁰ Frontex respondents explained that the considerations to use ADDS on TCNs might stem from the increased amount of work on borders due to crises coming and going. They said that "counter-terrorism was a top priority at that time, checking if someone has a purpose or intent to do harm".¹⁶¹ In their view, border guards have resources to handle day-to-day situations, but migratory crises and extreme situations require newer solutions. Székely, the DPO of iBorderCtrl, said that when the project was being proposed, "there was an intense situation and threat of terrorism increasing towards Europe". In addition, the Schengen transit countries were running out of resources and would have been dealing with a high terrorist threat.¹⁶² Experimentations with ADDS in iBorderCtrl was therefore justified by the perceived need for novel technologies to combat crisis, crime, and terrorism.

The abovementioned suggests that TCNs, in particular migrants, are framed as 'potential terrorists' who pose security threats to Europe. Székely explained that in the beginning of iBorderCtrl, Manchester Metropolitan University reached out with their 'Silent Talker' technology supposedly able to disclaim whether travellers would attempt to deceive the border

¹⁵⁸ Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

¹⁵⁹ European Council, "The EU's response to terrorism," (2022). <https://www.consilium.europa.eu/en/policies/fight-against-terrorism/>, 4; Apap, J., Radjenovic, A., and Dobrova, A., *Briefing: The migration issue* (European Parliament, 2019).

¹⁶⁰ European Commission, "From Research to Security Union.", 10 & 13.

¹⁶¹ Frontex interviewees, interview.

¹⁶² Székely, interview.

guard and “that became the Achilles heel of the project”.¹⁶³ Hence, the assumption that detecting deceptive TCNs can assist in the fight against terrorism underpins iBorderCtrl. Fighting terrorism through innovative means is not necessarily problematic as the EU has promised its citizens to ensure their protection. Nevertheless, migrants are considered justifiable targets for newer technologies under the guise of European security.¹⁶⁴ This evident securitisation of migrants is questionable as research shows that an increase in terrorism related to refugee influxes, especially in developed nations, is caused by scapegoating the refugee, as in making the refugee the target of terrorism rather than the perpetrator.¹⁶⁵ Again, it is questionable whether the measures against terrorism in iBorderCtrl follows the fundamental rights principle of proportionality. State suspicion directed at migrants through harsh technology use may not only be inaccurate, but also counter-productive in the fight against terrorism.¹⁶⁶

Furthermore, framing migrants as potentially deceitful and potential terrorists justifies extraordinary measures. Dumbrava, policy analyst at the EPRS, state that iBorderCtrl was tested because of security concerns due to waves of terrorism and migratory crises. He said, “because of the context, I think there was a sort of a push towards getting these updates through quickly to strengthen the borders”.¹⁶⁷ Similarly, the Frontex interviewees remarked that migratory crises and extreme situations require newer solutions.¹⁶⁸ Events such as migration influxes are described as “crises” and borders are repeatedly framed as places where crises occur.¹⁶⁹ Classifying borders as such heightens perceptions of needing control over unpredictable events. Not knowing when the next crisis will hit means that it is better to be overly prepared. Thus, creating an atmosphere of emergency that emphasises unpredictability and abnormality. These framings may contribute to the securitisation of migration by justifying extraordinary measures and justifying breaking a few rules. Perceptions of crises focusses on the costs of inaction and

¹⁶³ Ibid.

¹⁶⁴ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective."

¹⁶⁵ Polo, S. M. T. and Wucherpennig, J., "Trojan Horse, Copycat, or Scapegoat? Unpacking the Refugees-Terrorism Nexus," *The Journal of Politics* 84, no. 1 (2019), <https://doi.org/10.1086/714926>.

¹⁶⁶ Ibid.

¹⁶⁷ Dumbrava, C., interview by author, 2022.

¹⁶⁸ Frontex interviewees, interview.

¹⁶⁹ Apap, Radjenovic, and Dobreva, *Briefing: The migration issue*; Spindler, W., "2015: The year of Europe's refugee crisis," (2015). <https://www.unhcr.org/news/stories/2015/12/56ec1ebde/2015-year-europes-refugee-crisis.html>.

may lead to rushed experimentation.¹⁷⁰ Ultimately this alters what risks are deemed acceptable. In this reality, trying anything is often seen as better than not trying.¹⁷¹

iBorderCtrl is connected to fears of the unknown as the system tries to uncover deception before it appears. The digital rights activist Matthias Monroy notes that he is “in general very critical of these technologies or these databases because they are all meant for reducing risks or finding dangers before they appear”.¹⁷² As noted by Martins, security measures are directly connected to a fear of the unknown future. This thinking has a history of justifying exceptional measures.¹⁷³ Research would normally be conducted in a rather structured process. However, when applied research is conducted to respond to potential security threats, the state of emergency can shift perceptions of acceptable risks. The unknown threat becomes scarier than the known trade-offs, for instance migrants’ rights. Allowing experimentation with technologies based on assumed future risks may alter acceptable measures to negatively affect persons in vulnerable situations. Ultimately, the framing that EU needs technologies not only to respond to migration emergencies but also to combat terrorism justifies extraordinary technology.¹⁷⁴ Therefore, experimenting with technologies to fight crises, crime, and terrorism must ensure the incorporation of a cautionary mindset to ensure that the measures are not completely unreasonable.

Fear of crisis, crime and terrorism creates a sense of urgency which may lead to premature research of questionable AI technology. Sánchez-Monedero and Dencik question whether iBorderCtrl is a system that works at all. They assessed the assumptions and scientific validation underlying iBorderCtrl and found that it is very unlikely that the system would work in practice. In their view, the base assumption that micro-gestures indicate deception and that these gestures can be measured is “close to that of random guessing”.¹⁷⁵ Even though the aims of iBorderCtrl is to combat crises, crime, and terrorism, the means do not justify the end. It is well-established in research that it shall always be cautious. Academics disagree on the very premise and effectiveness of iBorderCtrl’s ADDS, questioning whether the project is cautious enough.

¹⁷⁰ Sandvik, Jacobsen, and McDonald, "Do No Harm: A Taxonomy of The Challenges of Humanitarian Experimentation.", 328.

¹⁷¹ Ibid., 328.

¹⁷² Monroy, M., interview by author, 2022.

¹⁷³ Martins, B. O., "Drones, Technology, and the Normalization of Exceptionalism in Contemporary International Security," *Nação & Defesa* 146 (2017), 40.

¹⁷⁴ Molnar, *Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up*, 1.

¹⁷⁵ Sánchez-Monedero and Dencik, "The Politics of Deceptive Borders: ‘Biomarkers of Deceit’ and The Case of iBorderCtrl.", 7-8.

Certainly, the EU needs to combat terrorism, and technologies provide additional opportunities to do this. However, STS explains that technologies, even with good intentions, can lead to harmful consequences if its base assumptions are not acknowledged. Accepting experimental technologies as the solution to crises, crime, and terrorism combined with a securitised notion of migrants showcase the loaded justifications laying the foundation of iBorderCtrl. What is developed depends much on what and who is perceived to be a threat.¹⁷⁶ For example, Jane Kilpatrick, researcher at Statewatch, pointed out that AI are not developed to detect racism in border guards because this is not perceived to be equally concerning as terrorism.¹⁷⁷ In addition, Nathalie Smuha, the coordinator for EU's HLEG on AI points out that the inclusion of law enforcement in iBorderCtrl, which is common practice for many H2020 projects, is another reason for why iBorderCtrl cannot be considered neutral.¹⁷⁸ In essence, the project cannot be considered 'just' research without considering the subjective assumptions it represents.

In sum, the abovementioned suggest that iBorderCtrl's aim to combat crises, crime, and terrorism creates a sense of urgency towards getting technological solutions which may shift perceptions of acceptable risks and lead to experimentations with exceptional questionable technology. The next section will elaborate on how researchers are not only encouraged to develop technologies to protect borders from threats, but they are also encouraged to bring these technologies to the market.

5.1.3 Research for innovation and implementation

Multiple EU initiatives encourage innovation using AI. For instance, the 2018 Coordinated Plan on AI noted that "Europe aims at creating an innovation friendly ecosystem for AI".¹⁷⁹ The EC, who have claimed that iBorderCtrl was 'just' research, emphasised at the same time their commitment to enable scientific breakthrough on AI.¹⁸⁰ Moreover, its 2020 White Paper on AI states that global competition on AI means that Europe must "promote the development and deployment of AI".¹⁸¹ Consequently, research with experimental ADDS is happening in a setting

¹⁷⁶ Bircan, T. and Korkmaz, E. E., "Big data for whose sake? Governing migration through artificial intelligence," *Humanities and Social Sciences Communications* 8, no. 1 (2021), <https://doi.org/10.1057/s41599-021-00910-x>, 4.

¹⁷⁷ Kilpatrick, J., interview by author, 2022.

¹⁷⁸ Smuha, N., interview by author, 2022.

¹⁷⁹ European Commission, "Annex to the Coordinated Plan on Artificial Intelligence," in *COM(2018) 795* (Brussels, 2018). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0795>, 1.

¹⁸⁰ European Commission, "White Paper On Artificial Intelligence - A European approach to excellence and trust.", 1.

¹⁸¹ *Ibid.*, 1.

where the funder of iBorderCtrl encourages innovative solutions and wishes to be a leading actor in AI.¹⁸² These initiatives create a push towards experimental innovation, while the EU simultaneously desires outputs.

The EU constantly emphasises their desire to implement new technologies from their research projects. The report “From Research to Security Union” notes that “[s]uccessful outcomes of security research are too often not taken up in products that reach the market. This is the major challenge that needs to be jointly addressed by all stakeholders”.¹⁸³ The EU explicitly states that security research should produce products for implementation. Without a doubt, AI holds great potential and can contribute to well-being and efficiency. However, the impacts of experimentation should not be minimized. The argument that iBorderCtrl is only research without implementation in mind is not believable due to EU’s clear desires to use AI. Furthermore, Frontex’ report on the capabilities of AI in border control explored projects, including iBorderCtrl, and stated that “none of the technology areas were perceived to face overwhelming barriers to adoption that could not be overcome”.¹⁸⁴ Hence, claims that iBorderCtrl will not be implemented does not seem trustworthy. Sarah Perret, researcher on migration and technology, noted from her studies on the EC’s funding, that the EC wants to see implementation of technology from research projects.¹⁸⁵ This objective is reflected in the Horizon Impact Award 2022. The award is handed out to projects with successful outputs.¹⁸⁶ Furthermore, implementation seems even closer because of the way funding is managed.

Funding regimes are criticised for eroding the space between research and implementation. According to Schafer, Professor in computational legal theory, “the funding pressures have eroded the wall between ‘this is purely academic research, you do not need to worry too much about this’, and this is actually bringing a product to the market”.¹⁸⁷ In simple terms, the way EU’s funding is structured, it intrinsically calls for outputs. Schafer further explains that erosion of these walls is caused by the H2020 requirements to document impacts, having generous funding schemes, and involvement of industry partners. All these components work against

¹⁸² Ibid., 2.

¹⁸³ European Commission, "From Research to Security Union.", 5.

¹⁸⁴ Frontex, *Artificial Intelligence-based Capabilities for the European Border and Coast Guard: Executive Summary* (Warsaw, 2021), <https://frontex.europa.eu/media-centre/news/news-release/artificial-intelligence-based-capabilities-for-european-border-and-coast-guard-1Dczge.>, 6.

¹⁸⁵ Perret, S., interview by author, 2022.

¹⁸⁶ European Commission, "Horizon Impact Award 2022," (n.d.). https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/prizes/horizon-impact-award_en.

¹⁸⁷ Schafer, interview.

reporting on negative outcomes and point towards implementation. Smuha, coordinator of the HLEG on AI, shares Schafer's view stating that "the boundary between research and application is quite thin".¹⁸⁸ Whereas in an ideal world, there would be robust borders between research and implementation. Schafer explains that due to these thin walls, technologies may be prematurely released, as is often seen with emotion detection technologies.¹⁸⁹ Previous section, 5.1.2, explained how urgency is an underlying driver within iBorderCtrl due to its very foundation to combat terrorism. These influences must be acknowledged in the core of research with extraordinary AI technology to ensure a cautionary approach. The EC argues that iBorderCtrl is 'just' research without regarding that their own research infrastructure effectively pushes towards implementation.

Research in iBorderCtrl, implemented or not, experiments with potentially harmful technologies. The Frontex respondents claim that the criticism against iBorderCtrl was beneficial because now "no one can come and say that now we will implement this automated system". They even wanted to thank the press for criticising iBorderCtrl and emphasise that it will not be deployed, even though it was neither planned nor managed by Frontex. In their view, using ADDS for border control has so far been proven infeasible.¹⁹⁰ While it is good to accept criticism and acknowledge the potential harmful outcomes of iBorderCtrl, there seems to be a waiving of responsibility. Smith from PICUM is concerned by this trend because iBorderCtrl represents the lookout for newer, exciting, innovative, and fresh ways of identifying TCNs, treating technologies almost like "toys".¹⁹¹ Schafer also note that none of the government initiatives in the last 15 years have pushed towards more cautious technological research.¹⁹² For Schafer, it would be great if academics could play with dangerous tools and report back objectively on what works or not, but he does not see this happening anytime soon due to the way research is structured.¹⁹³ No technology is completely neutral, and experimenting with technologies produce results even if it is never deployed.

Experimentation tends to enable future use. Frontex' report on AI for border control lists testing and learning about AI as an enabler for future adoptions. The report states that EU

¹⁸⁸ Smuha, interview.

¹⁸⁹ Schafer, interview.

¹⁹⁰ Frontex interviewees, interview.

¹⁹¹ Smith, interview.

¹⁹² Schafer, interview.

¹⁹³ Ibid.

initiatives “have incentivised the development and adoption of AI through encouraging investment and cooperation as well as augmenting EU’s global competitiveness in the AI market”.¹⁹⁴ In other words, iBorderCtrl is directly enabling future uses of ADDS. Thus, researching ADDS drives its very innovation.¹⁹⁵ Encompassing an STS mindset means to acknowledge the outputs produced from science and technology. In this regard, experimenting with ADDS in the iBorderCtrl project can lead to its use in the future, meaning that it is not ‘just’ a research project without any implications. Controlling borders through new AI technologies can also be very beneficial. As it pointed out by Frontex, AI is being explored to assist in responding efficiently to displacements, human trafficking, and cross-border crime.¹⁹⁶ AI poses many great opportunities to make these processes more efficient and secure that benefits not only European citizens and border agents who conduct challenging decisions on borders, but also incoming migrants. Nevertheless, the potential downfalls must be addressed and Kilpatrick from Statewatch notes that the Frontex report focuses mainly on the difficulty of making the technology work, not on its actual limitations. In her opinion, this is quite glaring.¹⁹⁷ Showing their focus on ‘how can we make this work’, and not ‘should we make this work at all’. Again, the EU shows their eagerness to innovate and implement AI.

Lastly, it is unlikely that the EU funded research just for research’s sake. As Smith from PICUM said, there must have been some notion that this had potential.¹⁹⁸ Digital rights activist Monroy emphasises that “iBorderCtrl is not the only one, it was just a pilot project, and they want more and there will be more”.¹⁹⁹ While the EC and Frontex interviewees argue that iBorderCtrl was ‘just’ research, newer projects with similar aims are currently receiving generous funding,²⁰⁰ such as the H2020 project “TRESSPASS” which ran from 2018 to 2021. According to Monroy, iBorderCtrl’s technology was continued on in the TRESSPASS project

¹⁹⁴ Frontex, *Artificial Intelligence-Based Capabilities for the European Border and Coast Guard: Final Report* (Warsaw, 2021), <https://frontex.europa.eu/media-centre/news/news-release/artificial-intelligence-based-capabilities-for-european-border-and-coast-guard-1Dczge>., 13-14.

¹⁹⁵ Frontex, *Artificial Intelligence-based Capabilities for the European Border and Coast Guard: Executive Summary*., 7.

¹⁹⁶ Frontex, *Artificial Intelligence-Based Capabilities for the European Border and Coast Guard: Final Report*., 1.

¹⁹⁷ Kilpatrick, interview.

¹⁹⁸ Smith, interview.

¹⁹⁹ Monroy, interview.

²⁰⁰ For information about some of the newer border control projects in Horizon Europe, visit: Frontex, "EU Research."

with their “real-time behavioural analysis” to conduct risk-based profiling at airports.²⁰¹ The project’s webpage acknowledges that lie detectors are examined to assess sincerity of travellers’ statements.²⁰² The project received double of what was afforded to iBorderCtrl. After all, iBorderCtrl may not be “galaxies away” as the Frontex respondents claim.²⁰³ Many technologies hold potential, but research may not be too far from implementation and thus the experimentation should be carried out carefully in correspondence with legal and ethical principles which is the topic of the following section.

5.1.4 Summary of justifications

Experimenting with ADDS in the iBorderCtrl project was justified through three main objectives. That migration must be managed, that crisis, crime, and terrorism must and can be combatted through innovative technologies, and that the EU needs innovation and implementation of AI technologies. This investigation indicates that these justifications are products of a securitised understanding of migrants in combination with a denial of how science and technology are inherently subjective products that in turn influence society. Therefore, the argument that researching with experimental ADDS technology is ‘just,’ as in only research, falls short. The following analysis will explore whether iBorderCtrl can be considered a ‘just’ research project in the sense of being legal and ethical.

5.2 Legal and ethical aspects of experimentation with iBorderCtrl

iBorderCtrl has not been deployed on borders, thus an analysis of its potential implications for migrants’ fundamental rights are yet too soon. Nevertheless, innovations with technology often promise improvement in fairness and efficiency.²⁰⁴ The following subchapter will discuss legal and ethical aspects of experimentation with ADDS in the iBorderCtrl project, evaluating whether the project can be considered ‘just’ research as in lawful and ethical research. This part begins with an analysis of the legal regulations around technological experimentation. Second, there will be a discussion around the potentiality that migrants are treated as suitable test subjects for experimental technology.

²⁰¹ CORDIS, "robusT Risk basEd Screening and alert System for PASSengers and luggage," (2022). <https://cordis.europa.eu/project/id/787120>.

²⁰² Monroy, "EU project iBorderCtrl: Is the lie detector coming or not?."; TRESSPASS, "FAQs," (n.d.). <https://www.tresspass.eu/faqs>.

²⁰³ Frontex interviewees, interview.

²⁰⁴ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 309.

5.2.1 Legal regulation

EU's research activities are guided by The Treaty on European Union (TEU), The Treaty on the Functioning of the European Union (TFEU), and the Charter of Fundamental Rights of the European Union.²⁰⁵ Research and technology development are mentioned in the TFEU, but only that the EU shall facilitate sharing of competence and define and carry out its own research activities and programmes.²⁰⁶ Meanwhile, the Charter's preamble states that the Charter was developed out of the necessity to have strong safeguards of fundamental rights due to societal changes by scientific and technological developments.²⁰⁷ Importantly, the TEU Art. 6(2) add that the EU shall accede to the European Convention on Human Rights (ECHR).²⁰⁸ Thus, EU's promise to protect fundamental rights established in the ECHR and the Charter is essential when discussing experimentations with ADDS in the EU.

Since 2012, EU has implemented additional directives and regulations to ensure protection of data. In 2016, EU's Law Enforcement Directive (LED) was established to regulate authorities' processing of personal data.²⁰⁹ Székely, as the DPO of iBorderCtrl, thought that the only applicable regulations for the project were ECHR, the Charter, and the LED since their ADDS was developed for law enforcement purposes.²¹⁰ Székely notes that at the time when the project was being proposed and evaluated, there was no General Data Protection Regulation (GDPR) since this was before 2016.²¹¹ However, LED Art. 9(2) establishes that if data is collected for scientific, research, or statistical purposes, then the processing of such data shall be in accordance with GDPR.²¹² GDPR is a strict law on data protection and ensures the safety of data collected on European citizens' and non-EU-citizens in EU's territory. Székely notes that since GDPR is stricter than LED, having to comply with it felt like "fighting with one hand tied

²⁰⁵ European Union, "Consolidated version of The Treaty on European Union," in *2012/C 326/13* (2012). http://data.europa.eu/eli/treaty/teu_2012/oj; European Union, "Consolidated version of The Treaty on the Functioning of the European Union " in *2012/C 326/47* (2012). http://data.europa.eu/eli/treaty/tfeu_2012/oj; European Union, "Charter of Fundamental Rights of the European Union."

²⁰⁶ European Union, "Consolidated version of The Treaty on the Functioning of the European Union "., Art. 4(3), Arts. 179-190.

²⁰⁷ European Union, "Charter of Fundamental Rights of the European Union."

²⁰⁸ European Union, "Consolidated version of The Treaty on European Union.", Art. 6(2).

²⁰⁹ The European Parliament and The Council of the European Union, "Law Enforcement Directive," in *DIRECTIVE (EU) 2016/680* (2016). <http://data.europa.eu/eli/dir/2016/680/oj>.

²¹⁰ Székely, interview.

²¹¹ Ibid.

²¹² The European Parliament and The Council of the European Union, "Law Enforcement Directive.", Art. 9(2).

on your back”.²¹³ This statement suggests that requirements set to protect privacy rights was viewed as a hindrance to technology development in iBorderCtrl.

The EU recognises that AI can threaten privacy and fundamental rights, while also wanting to benefit from AI’s opportunities. Therefore, the EU deemed it necessary to establish common rules for the development and use of AI and proposed the Artificial Intelligence Act in 2021. The AI Act has the dual objective of encouraging the use of AI while addressing the associated risks. It states that AI must be compliant with the legal protections afforded to individuals and respect fundamental rights.²¹⁴ On the other hand, the Act only sets minimum requirements for AI to encourage technological development and bring AI to the market.²¹⁵ Promoting innovation seems to have received a large focus in the Act, and experimentations are seemingly given purposeful space and lenience to flourish.²¹⁶ Nevertheless, in attempts to manage potential harmful AI technology, the Act has three categories for AI; prohibited, high risk, and low risk.

Automated deception detection systems such as in iBorderCtrl are categorized as high-risk AI systems. High-risk AI systems are those posing high risks to health and safety or fundamental rights. Such AI systems must be precise, transparent, have human oversight, and provide documentation for traceability.²¹⁷ Moreover, the Act lists certain high-risk AI systems for which risks already are, or likely will be a reality soon. Among these are “AI systems intended to be used by law enforcement authorities as polygraphs and similar tools or to detect the emotional state of a natural person”.²¹⁸ The Act also explains that technologies for migration, asylum and border management are all regarded as high-risk because these applications involve persons in vulnerable positions. Emotion detection and polygraphs are listed as examples of such migration technologies.²¹⁹ This would include iBorderCtrl’s ADDS system, again begging the question whether iBorderCtrl was ever ‘just’ research. The Frontex interviewees claimed that “the technology is not ready, and the conditions are not there. [...] We are galaxies away

²¹³ Székely, interview.

²¹⁴ European Commission, "Proposal for an Artificial Intelligence Act," in *COM (2021) 206 final* (Brussels, 2021). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206..>, 1.

²¹⁵ *Ibid.*, 3.

²¹⁶ *Ibid.*, title V, Measures in support of innovation, arts. 53-55.

²¹⁷ *Ibid.*, 7.

²¹⁸ European Commission, "Annexes to the Proposal for a Artificial Intelligence Act," in *COM(2021) 206 final* (Brussels, 2021). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0206..>, Annex III para. 6(b).

²¹⁹ European Commission, "Proposal for an Artificial Intelligence Act.", para. 39.

from it”.²²⁰ What remains unclear is why all the experts, except Székely, agreed that ADDS is underdeveloped and far-fetched, whilst the AI Act specifically lists this type of technology for migration management and does not prohibit its use. Categorising ADDS as high-risk acknowledges the risks ADDS poses but does not explicitly prohibit its use.

The AI Act has been criticised for legitimizing and legalising harmful technologies. Smuha, the coordinator for EU’s High-level Expert Group (HLEG) on AI argues that the AI Act may act as a legitimizing factor for certain technologies, including iBorderCtrl. By not categorising polygraphs and emotion detection AI as prohibited technologies, the Act indirectly legalises their use. Attempts at regulating AI is good and the EU shows their commitment to mitigate the potential harms of AI. However, the Act may be insufficient in this aim. All ten experts interviewed, except Székely the DPO of iBorderCtrl, agreed that ADDS does not work. Neither of them trusts such technology, nor believe it should be used on humans. None thought it would be a good idea to use it on incoming TCNs who may be in vulnerable situations. This goes to show that the Act does not prohibit a technology that experts almost unanimously oppose. In addition, Schafer, Professor in computational legal theory, said that the list of prohibited technologies only mentions unrealistic innovations. In his opinion, “all the real stuff is in the other categories”.²²¹ When asked about the AI Acts’ potential ability to regulate the use of iBorderCtrl technologies, he responds that “it is not entirely clear how the AI Act simply prevents bogus technologies on its own”.²²² Consequently, the prohibitions set by the AI Act end up allowing ADDS technologies while also giving developers an excuse to claim that they are upholding the law.

Vagueness of AI regulations is perceived to be purposeful but leaves the responsibilities to uphold the law to researchers. According to the NGO EDRI, the AI Act does not go far enough to protect fundamental rights and mainly focuses on the facilitation of development and use of AI.²²³ Molnar agrees by claiming that “all this experimentation occurs in a space that is largely unregulated, with weak oversight and governance mechanisms”.²²⁴ Perret, researcher on migration and technology, notes that ambiguity in the AI Act might be purposeful as this

²²⁰ Frontex interviewees, interview.

²²¹ Schafer, interview.

²²² Ibid.

²²³ EDRI, "EU's AI law needs major changes to prevent discrimination and mass surveillance," (2021). <https://edri.org/our-work/eus-ai-law-needs-major-changes-to-prevent-discrimination-and-mass-surveillance/>.

²²⁴ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 306.

leaves more room for interpretation and experimentation.²²⁵ The same argument is made by Molnar, that the lack of actual regulation might be deliberate.²²⁶ Laws are not only significant for what is mentioned and prohibited, but also what is left out. However, Dumbrava makes the point that even if AI would be more strictly regulated, companies will be creative around the AI Act to try to sell their products nevertheless.²²⁷ This further shows a weakness of law: it can be circumvented. However, what about human rights assurances in Europe, will they not protect us from harmful applications of AI even if the Act is vague?

Fundamental rights influence technological development, but some argue that these guarantees are not sufficient on its own. Schafer argues that experimentation is problematic even with fundamental rights assurances.²²⁸ He notes that human rights come in as a “sort of post-decision constraint”.²²⁹ This is evident in Frontex’s report on AI’s capabilities for borders, where human rights are listed as a barrier for implementation.²³⁰ So, even though fundamental rights assurances may protect against harmful AI, they are being treated as barriers for experimentation rather than guiding principles. A technological deterministic view may let technology lead the way of what is accepted rather than rights principles. In Smuha’s opinion, “we need an ex-ante approach” to ensure fundamental rights protection in the implementation of such technologies.²³¹ Ex-ante means before the event. In other words, fundamental rights must be assessed prior to and during experimentation, and not become an after-thought. This approach complies with STS by acknowledging that technology is not a neutral tool that simply make societies more efficient. An example of STS in practice with AI is the ethics guidelines set by the HLEG on AI because they recognise that technology can contribute to injustices and must put fundamental rights at the centre to enhance wellbeing.²³²

A specific problematic aspect with the experimentations with ADDS is that it is not regarded as transparent enough. As previously mentioned, the AI Act proclaims that systems that detect emotions must have human oversight and be transparent.²³³ The same principle of

²²⁵ Perret, interview.

²²⁶ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective."

²²⁷ Dumbrava, interview.

²²⁸ Schafer, interview.

²²⁹ Ibid.

²³⁰ Frontex, *Artificial Intelligence-Based Capabilities for the European Border and Coast Guard: Final Report.*, 24.

²³¹ Smuha, interview.

²³² High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, European Commission (Brussels, 2019).

²³³ European Commission, "Proposal for an Artificial Intelligence Act.", 7.

transparency is established in the HLEG on AI's Ethics Guidelines.²³⁴ Similarly, the Frontex interviewees claim that “communication and transparency is critical” when experimenting with tools such as ADDS.²³⁵ The academic community and civil society should be able to monitor what is happening with AI and therefore the experimentation must be transparent, said Dumbrava.²³⁶ Transparency of iBorderCtrl has already been assessed in the Court of Justice of the European Union. Member of the European Parliament, Patrick Breyer, filed a lawsuit against the European Research Executive Agency (REA) to release classified documents on ethics, legality, and results of iBorderCtrl, claiming that iBorderCtrl was not transparent enough.²³⁷ The court ruled in Breyer's favor that the agency cannot keep documents secret unless necessary for commercial interests, and the documents Breyer requested must be released.²³⁸ However, the documents were severely redacted, but Breyer managed to restore the text.²³⁹ His request corresponds with requirements set in the proposed AI Act to provide documentation for traceability²⁴⁰ and the ethics guidelines by the HLEG on AI. This shows that transparency is challenging when it comes to technology development.

Moreover, the complexity of ADDS makes transparency and contestability difficult to ensure. Machine learning (ML), used in iBorderCtrl, often becomes a “black box” where one cannot know the reasoning behind the automated decision.²⁴¹ This is because the algorithms eventually become so complex that it is impossible to understand.²⁴² Implementing this sort of technology to be used by border agents is quite concerning. Neither the border agent nor the traveller will know on what grounds its decision is based. Moreover, as noted by Kilpatrick, “people seeking asylum are more likely to meet hostility at the border and they are less likely

²³⁴ High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, 14.

²³⁵ Frontex interviewees, interview.

²³⁶ Dumbrava, interview.

²³⁷ Patrick Breyer, "Transparency lawsuit against secret EU surveillance research: MEP Patrick Breyer achieves partial success in court."; *Patrick Breyer v. European Commission*, No. T-188/12 (Court of Justice of the European Union (CJEU), 27 February 2015).

²³⁸ Patrick Breyer, "Transparency lawsuit against secret EU surveillance research: MEP Patrick Breyer achieves partial success in court."

²³⁹ To access the documents, visit: Breyer, P., "Big brother „video lie detector“: EU research funds are misused to lobby for legislative changes," (2021). <https://www.patrick-breyer.de/en/big-brother-video-lie-detector-eu-research-funds-are-misused-to-lobby-for-legislative-changes/>.

²⁴⁰ European Commission, "Proposal for an Artificial Intelligence Act.", 7.

²⁴¹ High-Level Expert Group on Artificial Intelligence, *A definition of AI: Main capabilities and scientific disciplines.*, 5.

²⁴² Frontex, *Artificial Intelligence-Based Capabilities for the European Border and Coast Guard: Final Report.*, 42.

to have the information needed to get redress”.²⁴³ It is very unclear how redress would be safeguarded in the experimentations of iBorderCtrl and similar projects. On the other hand, some argue that the technology in iBorderCtrl will just be used as a helping device, and therefore the agent is still responsible.

The Frontex interviewees note that AI should not be making ‘negative decisions’ meaning rejecting TCNs, because “if anything says no, that is a human decision to be taken”.²⁴⁴ However, oftentimes humans trust technological tools more than their own judgement. If a border agent gets notified about someone being deceitful, to which extent does the agent rely on that? GDPR Art. 22 establishes the right to not have serious decisions for individuals made by automated systems. However, at what point does a border agent rely too much on the auxiliary device? The black box system of AI would make such an assessment impossible. Therefore, the mere use of an auxiliary device risks violating GDPR Art.22.²⁴⁵ The Frontex interviewees disagree with this notion. They claim that “we accept human bias and bad decisions more than if machines make that mistake”.²⁴⁶ They mean that the standards set for precision with machines is higher than for humans. In their view, even if a machine is more accurate in its evaluation, a part of the general population would still prefer a human because “the human can be taken to court or educated, and the machine is just heartless”.²⁴⁷ Essentially, contestability is easier with humans because AI lack self-reflexivity and humans can be taken to a court. This is why Schafer notes that “I would like to see more scepticism on the side of the EU” when it comes to experimental AI. In his view, “there is an enthusiastic embrace of technologies that are badly understood”.²⁴⁸ In sum, iBorderCtrl is surrounded by principles of transparency and contestability, but these are not fully reflected in the project nor the proposed AI Act.

5.2.2 Migrants as test subjects

Migrants have long been controlled and tracked.²⁴⁹ There is a tendency of developing and using new databases and technologies on migrants. As was mentioned in section 5.1.1, migrants have usually been at the receiving end of EU’s new databases. For instance, asylum

²⁴³ Kilpatrick, interview.

²⁴⁴ Frontex interviewees, interview.

²⁴⁵ The European Parliament and The Council of the European Union, "General Data Protection Regulation," in *REGULATION (EU) 2016/679* (2016). <http://data.europa.eu/eli/reg/2016/679/oj>., Art. 22.

²⁴⁶ Frontex interviewees, interview.

²⁴⁷ Ibid.

²⁴⁸ Schafer, interview.

²⁴⁹ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 308.

seekers were the first group to have their fingerprints stored in 2003 with Eurodac.²⁵⁰ According to digital rights activist Monroy, since asylum seekers were first, this shows that they were considered appropriate test persons of experimental technologies.²⁵¹ Besters and Brom comment on this same trend by saying that “the European migration policy is turned into a kind of ‘test lab’ for new technologies”.²⁵² The same is claimed by Smith, she says that TCNs almost are treated as lab rats.²⁵³ Now that there is an increase of AI, Molnar is concerned that this trend is carried on because “States single out the migrant population as a viable testing ground for new technologies”.²⁵⁴ Targeting migrants in newer technologies is concerning due to data collection.

One concerning aspect of aiming iBorderCtrl at TCNs is the need to collect enormous amounts of data. Collecting data, even for research, still poses a risk. Monroy states that “no database is secure. The more data you gather, the higher the risks are that you lose it”.²⁵⁵ Székely agrees with the severity of collecting data. He claims that iBorderCtrl cannot be considered “just a research” because it intends to collect personal data of migrants which can be lost.²⁵⁶ For example, on November 9th, 2021, the International Committee of The Red Cross was targeted in a cyber-attack. The server contained names, locations, and contact information on more than 515 000 people worldwide, including missing persons and their families, detainees, and persons receiving services due to armed conflict and migration.²⁵⁷ Schafer shares the concern about data collection, “I am always very sceptical of an argument of expanded use of data”, because “the moment we build infrastructures, the moment data is collected, it is there”.²⁵⁸ Collecting data on anyone pose risks to their privacy and security. However, TCNs and particularly migrants are in extra vulnerable situations since they may have less opportunities to access their data and their data may contain more sensitive information. It would be necessary to understand

²⁵⁰ Aukrust, M., "Eurodac," in *Store Norske Leksikon* (25.08.2020). <https://snl.no/Eurodac>.

²⁵¹ Monroy, interview.

²⁵² Besters and Brom, "'Greedy' Information Technology: The Digitalization of the European Migration Policy.", 456.

²⁵³ Smith, interview.

²⁵⁴ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 306.

²⁵⁶ Székely, interview.

²⁵⁷ ICRC, "Cyber-attack on ICRC: What we know," (2022). <https://www.icrc.org/en/document/cyber-attack-icrc-what-we-know>.

²⁵⁸ Schafer, interview.

how projects like iBorderCtrl plan to mitigate the additional risks to privacy and data governance established as ethical guidelines by the HLEG on AI.²⁵⁹

The interviewees from Frontex on the other hand argue that Horizon 2020 was looking to bring advanced technologies to the EU, and the news press makes things bigger than they are.²⁶⁰ Of course migrants also benefit from efficiency at borders through technological solutions, but as STS highlights, technologies cannot be viewed simply as tools that increase efficiency without its potential negative implications. There may be a cost to this efficiency. For instance, collection of data on migrants is particularly risky because migrants are not sufficiently protected through international digital rights.²⁶¹ Smuha, coordinator of the HLEG on AI, notes that the most obvious legal issue with experimentations with ADDS is that TCNs “do not enjoy the same rights as EU-citizens do”.²⁶² Even if data protection in GDPR should apply to migrants, arguments of national security, managing migration and combatting terrorism may function as a legal base for countering these safeguards. Consequently, TCNs are in practice less protected by law than EU-citizens which may explain why migrants are perceived to be justifiable targets for high-risk AI.²⁶³

Molnar argues that lack of clear regulations for data collection and experimentations with technology on the migrant population is deliberate. In her view, the experimentations with AI technologies are just a newer way to distinguish between the rights of EU-citizens and TCNs, and to control migrants.²⁶⁴ Bircan and Korkmaz suggest that this justification is connected to securitisation theory. When designing technologies, migrants are often depicted as security threats instead of focusing on their fundamental rights.²⁶⁵ Technological innovations are often justified based on the perceived need for novel techniques to manage migration without considering the potential impacts on fundamental rights.²⁶⁶ When migrants are viewed as security threats, meaning efficiently securitised, it becomes justified to infringe on their rights. Molnar concludes in her article on AI development for migration management that the distinctions

²⁵⁹ High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, 14.

²⁶⁰ Frontex interviewees, interview.

²⁶¹ Molnar, *Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up*, 1.

²⁶² Smuha, interview.

²⁶³ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 307.

²⁶⁴ *Ibid.*, 306.

²⁶⁵ Bircan and Korkmaz, "Big data for whose sake? Governing migration through artificial intelligence.", 3.

²⁶⁶ Molnar, *Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up*, 1.

made between rights afforded to EU-citizens and TCNs is what makes migration management the best laboratory for research with experimental technologies.²⁶⁷ However, in theory, there should be no difference between their rights because EU agencies are responsible for upholding EU values towards all.²⁶⁸ Experts and academics argue that a differentiation is made despite fundamental rights obligation which may be connected to power dynamics.

Underlying power dynamics may explain why migrants are presumed to be viable test subjects. As Molnar points out, “technological development [...] replicates existing power hierarchies”.²⁶⁹ Monroy suggests that developing ADDS for TCNs perhaps is deliberate because “nobody would protest because no EU-citizen is affected”.²⁷⁰ While there may be many reasons why iBorderCtrl chose to target TCNs, it cannot be dismissed that there are inherent power imbalances between authorities and migrants. For example, neither the migrant nor NGOs have access to controlling or supervising how such technologies are used.²⁷¹ Contradicting the principles of oversight established in the ethics guidelines by the HLEG on AI.²⁷² Smuha and Dumbrava argues that the EU must take into account the vulnerability of migrants crossing borders.²⁷³ The Frontex interviewees agree that “it is so sensitive to put a person coming from war [...] in front of a machine and that machine to check the movement of eyes and micro movements of the face, we are not yet there”.²⁷⁴ Yet, Frontex do not seem to take issues with experimenting with technologies to hinder and control movement. Whereas Schafer argues that even testing should not be undertaken with “the most sensitive, most problematic, example that I could possibly imagine”.²⁷⁵ The AI Act recognises the special considerations required for technologies that deal with migration by regarding them as high-risk.²⁷⁶ Migrants are in vulnerable positions due to power asymmetry and difficulties with seeking redress, therefore experimental AI aimed at them will always be risky. Issues connected to power are further exacerbated by the way experimentation leads toward an externalisation of borders.

²⁶⁷ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 308.

²⁶⁸ Smuha, interview.

²⁶⁹ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 307.

²⁷⁰ Monroy, interview.

²⁷¹ Bircan and Korkmaz, "Big data for whose sake? Governing migration through artificial intelligence.", 3.

²⁷² High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, 14.

²⁷³ Smuha, interview; Dumbrava, interview.

²⁷⁴ Frontex interviewees, interview.

²⁷⁵ Schafer, interview.

²⁷⁶ European Commission, "Proposal for an Artificial Intelligence Act.", para. 39.

Experimentation with ADDS represent movement towards digital externalisation. The EU has a history of externalising its border control by outsourcing tasks related to migration management.²⁷⁷ iBorderCtrl's process starts the travel journey at home which externalise border control. This is not new as travellers have had to pre-register and submit applications at home in many instances. The difference lays in the type of action the travellers, TCNs in this instance, are asked to perform. An interview to detect deception can have unforeseen consequences, particularly for people in vulnerable situations. Take for instance someone who wishes to seek asylum. Answering personal questions or stating reasons for travelling may put them at risk. iBorderCtrl does not specify how people in these situations would be protected. According to Kilpatrick, "it does not seem like they have attempted to understand the realities for someone who is in a position where they are seeking asylum" and this experimentation "looks like it is geared towards making it harder to arrive and to remain. It's efficiency, but for what end?".²⁷⁸ Molnar claims that experimentations with AI often reflect States' desire to externalise their duty to ensure migrants' human rights.²⁷⁹ Perret noted that a consequence of externalisation and datafication of border control is that it may reduce rejection visibility, which perhaps makes it easier to reject TCNs.²⁸⁰ Interestingly, Bircan and Korkmaz argue that the term 'managing migration' is oftentimes a euphemism of preventing migration which could be easier through externalising border controls.²⁸¹ This goes hand in hand with the point made by Kinchin that none of the AI technologies are developed to actively benefit the refugee.²⁸² In iBorderCtrl, they experimented with digitally externalising borders at the possible expense of migrants' ability to move.

Moreover, it cannot be dismissed how assuming migrants to be a justifiable target for ADDS shows negative stigmas and perceptions. Smith perceives the experimentations with ADDS for TCNs as "profoundly stigmatizing for individuals and potentially can have enormous impacts on their lives, and all of that seems to be kind of minimized".²⁸³ She underscores that

²⁷⁷ Laube, L., "Diplomatic Side-Effects of the EU's Externalization of Border Control and the Emerging Role of 'Transit States' in Migration Diplomacy," *Historical Social Research / Historische Sozialforschung* 46, no. 3 (2021), <https://doi.org/10.12759/hsr.46.2021.3.78-105.>, 79.

²⁷⁸ Kilpatrick, interview.

²⁷⁹ Molnar, "Technology on the margins: AI and global migration management from a human rights perspective.", 306.

²⁸⁰ Perret, interview.

²⁸¹ Bircan and Korkmaz, "Big data for whose sake? Governing migration through artificial intelligence.", 4.

²⁸² Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

²⁸³ Smith, interview.

presuming migrants are deceitful is humiliating. According to her, testing “a whole set of technologies that are used that presuppose your lack of credibility, and that you are a person not to be trusted, it is profoundly humiliating. [...] We cannot underestimate the humility and the indignities of the people subjected to these types of processes”.²⁸⁴ The mere assumption that TCNs are more deceitful than EU-citizens, as they are the targets of this technology, is stigmatizing. In section 5.1.1 and 5.1.2, the fallacies of treating TCNs, particularly migrants, as security threats were raised. According to securitisation theory, security threats are socially constructed and state suspicion towards migrants may be wrongly directed and counter effective. The HLEG on AI notes that societal well-being is one of the ethical guidelines for EU’s AI development.²⁸⁵ Arguably, using ADDS on all incoming TCNs suggest harmful stigmas and challenge the principle of well-being. Perret makes the same point that developing ADDS to be used on all TCNs assumes that migrants are trying to fake their way in.²⁸⁶ Kilpatrick shares the opinion that subjecting TCNs to ADDS “is a very dehumanizing process”.²⁸⁷

Testing potentially harmful technology on persons in vulnerable situations is additionally concerning because iBorderCtrl’s ethical assessment was found to be a rushed process. During the last days of submitting the project proposal, it was decided that Székely should be the DPO because he had a doctorate in political science.²⁸⁸ Székely said that they wanted to conduct a proper ethical assessment but did not get the chance to do so. When the research group was on their way to seek ethical guidance from different universities, an article about iBorderCtrl was published and received criticism. Therefore, the Hungarian border police immediately stopped all testing.²⁸⁹ The reality of iBorderCtrl’s ethical assessment is completely opposite of how EU agencies assume. The Frontex interviewees and Dumbrava both believed that the ethical assessments required for H2020 funding was thoroughly conducted in the iBorderCtrl project.²⁹⁰ Whereas Székely admitted that it was a messy process and that it would be beneficial to have even stricter processes when applying for funding. Székely said, “we did not have a DPIA [Data Protection Impact Assessment], not even when we submitted the proposal” and that is something Székely would prescribe for every proposal dealing with personal

²⁸⁴ Ibid.

²⁸⁵ High-Level Expert Group on Artificial Intelligence, *Ethics Guidelines for Trustworthy AI*, 14.

²⁸⁶ Perret, interview.

²⁸⁷ Kilpatrick, interview.

²⁸⁸ Székely, interview.

²⁸⁹ Ibid.

²⁹⁰ Dumbrava, interview; Frontex interviewees, interview.

data.²⁹¹ One of the respondents told me in confidence that they perceived ethical assessments to be a rushed process in H2020 projects, which is very concerning for AI experimentation. Perret has the same perception that H2020 projects treat ethics as a ‘box to tick’ and not as a priority. She says that the projects include ‘key words’ to pass the ethics requirements.²⁹² Consequently, experimentation with ADDS is problematic because ethical assessments were not properly conducted. Smuha notes that “hopefully, it [the critique of iBorderCtrl] will bring about a thorough reflection on which types of projects they want to invest on in the future” and that experimentation and funding should always be guided by EU values.²⁹³

To summarise, TCNs, including migrants, are the target group in iBorderCtrl, which may be placed in a larger pattern of treating migrants as suitable test subjects. Collecting their data, even for research is concerning, and the abovementioned suggests that migrants are deliberately targeted because their rights are in practice weaker protected and power dynamics allow for extraordinary experimentations. iBorderCtrl represents experimentations towards digital externalisation of borders where the negative stigmas against migrants are coupled with rushed ethical assessments. Discussions on ADDS should not just revolve around how technology is developed but ask whether it should be developed at all.²⁹⁴ Many scholars argue that fundamental rights should be the guiding principle for research and development with AI technologies, and that scholars, migrants, and decision-makers must be a part of these important conversations. This thesis has joined this larger discussion.²⁹⁵

5.2.3 Summary of legal and ethical aspects

There are several problematic legal and ethical aspects of experimenting with iBorderCtrl’s ADDS. The proposed AI Act is supposed to regulate the development and use of AI technology but does not protect against experimentation and deployment of ADDS. ADDS is legalised as a ‘high-risk AI system’ and fundamental rights assurances may not sufficiently regulate its development. And whereas high-risk AI systems must be coupled with proper transparency,

²⁹¹ Székely, interview.

²⁹² Perret, interview.

²⁹³ Smuha, interview.

²⁹⁴ Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination.", 21.

²⁹⁵ Bircan and Korkmaz, "Big data for whose sake? Governing migration through artificial intelligence."; Molnar, "Technology on the margins: AI and global migration management from a human rights perspective."; Kinchin, "Technology, Displaced? The Risks and Potential of Artificial Intelligence for Fair, Effective, and Efficient Refugee Status Determination."

providing transparency is a complex task which face hindrances such as ‘commercial interests’ and black box systems. This reality makes the important principle of contestability a difficult one to ensure. Moreover, migrants are arguably treated as justifiable test subjects in iBorderCtrl. Promoting collection of more data on migrants is concerning because all data collection pose risks. This concern is exacerbated by the differentiations made between EU-citizens’ rights and migrants’ rights. In theory, there should be no difference. All the while migrants are subjected to asymmetries of power and technologies that experiment with digitally externalising borders. Assuming TCNs to be deceitful is also a stigmatizing belief that must not be undermined. These concerns are especially worrisome knowing that the ethics assessments in iBorderCtrl was rushed.

6 Conclusions

EU-funded research of experimental AI technology for border control in iBorderCtrl is problematic because its justifications represent a securitised notion of migrants and a lack of recognition of how technologies reflect and produce assumptions and perceptions. Thus, the project cannot be considered 'just' as in only research. Through exploring the case study iBorderCtrl this thesis suggests that research with ADDS has been justified through the perceived need for technological solutions to the 'migration issue'. Moreover, fear of crisis, crime, and terrorism justifies the alleged urgent need for AI solutions. The applied research in iBorderCtrl targets potential security threats and by creating a sense of urgency, perceptions of acceptable risks may shift, allowing for exceptional technologies, disproportionate to the actual threat. Arguing that iBorderCtrl is 'just' research was found questionable because the EU's generous funding regimes erode walls between research and implementation, due to the desire to become leading on AI.

The second section of this thesis' analysis, - if research and development of technologies like iBorderCtrl is 'just' from a legal and ethical position -, found that the experimentation is problematic because it is developed within a weak legal framework that treats migrants as justifiable targets for questionable technology. The 'justness' of iBorderCtrl is questionable because fundamental rights are treated as barriers. This thesis suggests that the legal framework in the proposed AI Act is insufficient in restraining the testing of ADDS. TCNs are made to be justified targets for exceptional technologies because a differentiation is made between EU-citizen's rights and migrants rights, often in the name of security. The findings in this study implies that the ethical assessments made in iBorderCtrl was not as thorough as it should have been, nor as thorough as the stakeholders like Frontex believed it was.

Interestingly, the experts interviewed for this thesis unanimously agreed, except the DPO Székely, that ADDS is underdeveloped and will not be used soon. This finding suggests that experimentations is happening in a strange middle place where experts are concerned with the technology, but the laws do not prohibit its development. As stated by Jan Egeland, the Director for the Norwegian Refugee Council (NRC), "we need to fight all of these sophisticated ways that Europe now tries to keep people out. This continent should, more than any other, welcome people who need protection, and give them asylum, if they have a basis for protection".²⁹⁶

²⁹⁶ Egeland, J., interview by author, 2022.

Technology is based on and reproduce ideas, perceptions, and basis for future research. The Charter of Fundamental Rights of the European Union acknowledges the necessity to protect fundamental rights when technologies are developed.²⁹⁷ It must not be overlooked that migrants already suffer fundamental rights abuses at EU's borders and if the trend continues to the AI domain, the Charter may be insufficient in its wishes to safeguard fundamental rights against technological developments. The call for innovative border technologies seems to occur at a faster pace than legal regulations can keep up, much afforded to EU's enthusiastic embrace of all things AI in the name of border security. AI will indeed have significant implications, including in EU's border security. Addressing the problematic legal and ethical factors of iBorderCtrl and learning from its harmful assumptions is essential to ensure that future applied research projects can lead to prosperity. Beginning by acknowledging that iBorderCtrl was not 'just' research.

²⁹⁷ European Union, "Charter of Fundamental Rights of the European Union.", preamble.

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Appendix A - Interviewees

Alyna Smith	Doctor Alyna Smith is the Deputy Director for the NGO Platform for International Cooperation on Undocumented Migrants (PICUM).
Burkhard Schafer	Professor Burkhard Schafer teaches computational legal theory at University of Edinburgh. In addition, he is co-founder and Director of the Scottish Research Centre for IP and Technology Law (SCRIPT) at the University of Edinburgh.
Costica Dumbrava	Doctor Costica Dumbrava works as a Policy Analyst at the European Parliamentary Research Service (EPRS).
Frontex interviewees	The two interviewees from Frontex (the European Border and Coast Guard Agency) holds positions at Frontex' research and innovation unit.
Jane Kilpatrick	Jane Kilpatrick is a researcher at the NGO Statewatch. Kilpatrick leads Statewatch's work on Frontex.
Matthias Monroy	Matthias Monroy is a digital and civil rights activist and editor of the German civil rights journal Bürgerrechte & Polizei/CILIP.
Nathalie Smuha	Nathalie Smuha is a researcher at KU Leuven (Katholieke Universiteit Leuven). Smuha coordinated the EU's High Level Expert Group (HLEG) on AI. She is a scientific expert at the Council of Europe's Committee on AI, and a member of OECD's Network of Experts on AI.
Sarah Perret	Doctor Sarah Perret is a research associate at the Department of War Studies, King's College London.

Zoltán Székely

Doctor Zoltán Székely was iBorderCtrl's Data Protection Officer (DPO). He is co-founder at Székely family & Co which is a company providing training and teaching for research projects.