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The Implementation of the EU Settlement Scheme:

Interoperability, Intermediaries, and Workarounds

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Ph.D. in Science, Technology and Innovation Studies

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Declaration

I declare that this thesis is solely the work of the author and has not been submitted for any other degree or professional qualification. Except where otherwise acknowledged, this work is my own in its entirety.

James Besse

Abstract

This thesis is motivated by an interest in understanding the implementation of the EUSS and how it has come to be used for immigration checks in the UK during the period of the EUSS' early implementation (2021 - 2023). With the end of Freedom of Movement (FoM) rights between the EU and the UK, EU citizens living in the UK have lost the legal basis for doing so, and the EU Settlement Scheme (EUSS) provides a new legal basis for the continued residence of EU citizens living in the UK under specific conditions. The EUSS is both a policy instrument and an IT system. It provides an immigration status to EU/EEA citizens and their family members through an online application that automatically assesses an applicant's eligibility and provides a means of viewing and showing evidence of this status online. In this thesis, I contribute to the emerging research program at the intersection of Science and Technology Studies (STS), Information Systems (IS), and critical security studies and its approach to researching migration control IT implementation. Specifically, I explore how three concepts from this research on implementation – interoperability, innovation intermediaries, and workarounds – can help to illuminate various concerns with the implementation of the EUSS. The thesis is motivated by an interest in understanding the implementation of the EUSS and how it came to be used for immigration checks in the UK during the period of the EUSS's early implementation (2021 - 2023). My research addresses two main areas of concern: 1) how the EUSS' digital status is implemented in British society and b) how it shapes and is shaped by the UK's broader development of e-government and electronic identification. By mapping out the integration of the EUSS into British e-government and how users learn about the scheme and integrate it into their lives, I find that a) there was a substantial role of intermediaries in assisting people to use the new technology, b) there was a wide range of workarounds that people used during this period of early adoption, and c) these often responded to poor integration of the EUSS into wider e-government and the installed base of technologies and practices for checking immigration statuses. Such findings are consistent with STS and IS research on IT applied in other domains, but they bring to light aspects of the EUSS that have been hence un- or under-researched in existing literature. As a contribution to research on the EUSS, these findings thus show how the dynamics of adoption and user innovation examined by STS and IS researchers in other areas (e.g., healthcare and business) are also present in the EUSS. This research has the potential to inform both policy efforts to mitigate the negative impacts of projects like the EUSS and academic efforts to synthesize STS research with work in critical migration, border, and security studies.

Lay Summary

This thesis investigates the implementation of the EU Settlement Scheme (EUSS). The EUSS is an IT system that provides EU/EEA citizens and their family members an immigration status to live in the UK after the end of the Freedom of Movement between the UK and the EU, commonly known as Brexit. The EUSS requires one to apply through an online application and then prove their immigration status using the online system. The goal of the thesis is to understand the early use of the EUSS and how it has come to be used for immigration checks between 2021 and 2023. By describing how applicants and status holders learn about the scheme and cope with problems, the thesis offers an account of a range of practical difficulties, available support networks, and non-standard uses of the EUSS that have yet to be systematically documented in the existing literature. By documenting these dynamics of implementation, the study fills a gap in existing literature, which has tended to focus on the harmful and differential impacts created by the design of the EUSS. Finally, the research has the potential to inform both policy efforts to mitigate the negative impacts of projects like the EUSS and academic efforts to synthesize Science and Technology Studies (STS) research with work in critical migration, border, and security studies.

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List of Abbreviations

ANT	Actor-Network Theory
BOAP	Biography of Artifacts and Practices
BRC	Biometric Residence Card
Brexit	The United Kingdom's withdrawal from the European Union
BRP	Biometric Residence Permit
CoA	Confirmation of Application
COVID-19	Coronavirus Disease of 2019
CSS	Critical Security Studies
DMB	Denied My Backup
DOB	Date of Birth
DVLA	Driver and Vehicle Licensing Agency
DWP	Department of Work and Pensions
EC	European Commission
ECS	Employer Checking Service
EEA	European Economic Area
E-government	Electronic Government
EHIC	European Health Insurance Card
EU	European Union
EURODAC	European Dactyloscopy
EUSS	European Union Settlement Scheme
EEA	European Economic Area
FoM	Freedom of Movement
HMRC	Her Majesty's Revenue and Customs
HR	Human Resources

IAM	Identity and Access Management
ICTs	Information and Communication Technologies
ID	Identity
II	Information Infrastructure
ILR	Indefinite Leave to Remain
IS	Information Systems
IT	Information Technology
LTR	Limited Leave to Remain
NINo	National Insurance Number
PDF	Portable Document Format
RtW	Right to Work
SCOT	Social Construction of Technology
SME	Small or Medium-Sized Enterprise
SST	Social Shaping of Technology
STS	Science and Technology Studies
UC	Universal Credit
UK	United Kingdom
V&P	View and Prove Your Status
YEN	Young Europeans Network

Chapter 1. An Introduction to the EU Settlement Scheme

1. Introduction

This thesis examines the implementation of the EU Settlement Scheme (EUSS), an identity and access management (IAM) project used to provide an immigration status and a method of evidencing it to EU nationals living in the UK after Brexit. It is also about the difficulties of studying such a project.¹ The EU Settlement Scheme (EUSS)² was introduced by the UK government in response to the United Kingdom (UK)'s 2016 vote to leave the European Union (EU), often referred to as Brexit. As part of the Withdrawal Agreement, the Scheme was designed to protect the rights of EU, EEA (European Economic Area), and Swiss citizens living in the UK, as well as their eligible family members and others covered by Freedom of Movement (FoM) rights, upon the cessation of these rights. As the European Commission (EC) writes, FoM rights are “the right of EU citizens and legally resident third-country nationals ([non-EU citizens] in accordance with the Treaty establishing the European Community) to move and reside freely within the territory of the EU Member States” (European Commission, n.d., p.1).

The EUSS provides a legal pathway for EU, EEA, and Swiss citizens residing in the UK to transition from FoM rights to rights under UK immigration law, maintaining their access to the right to live, work, and access public services in the country. It enables eligible individuals to apply for either Settled Status or Pre-Settled Status (EUSS-specific phrasings of Indefinite Leave to Remain (ILR) and Limited Leave to Remain (LTR)), depending on their length of continuous residence in the UK. Within the EUSS, ILR is referred to as Settled Status, and LTR is referred to as Pre-Settled Status.

Examinations of the EUSS thus far in both policy and academic literature have focused on the legal, policy, and political underpinnings of the Scheme, the technical design of the scheme, discrimination and how this is associated with design and administration decisions, negative impacts on users and in particular vulnerable groups, and how users navigate and resist the Scheme (Brahic and Lallement, 2020; Algorithm Watch, 2020). As I show in Ch.2, the EUSS is widely debated in the media and civil society, with some arguing that it has an intentionally flawed design (i.e., in this context, consisting of harmful policies and technologies) and others focusing on its role in the Brexit process. Media outlets have published stories about the long backlogs of EUSS applications (O’Carroll, 2021). As the East European Resource Centre writes,

¹ Unless otherwise stated, all websites referenced in this thesis were last visited in August 2023. Throughout the thesis, American English spelling conventions are used, except for when in quoted material or proper names. All quoted material from interviews has been modified from its original form to protect the confidentiality of interviewees.

² Throughout the thesis, the EUSS is referred to variously as the project, the scheme, the Settlement Scheme, and the EUSS.

There continue to be a large group of disadvantaged Eastern Europeans who are disengaged from the EUSS process. One of the main reasons is uncertainty if Brexit is going to happen so there is no point in engaging in an administrative process that, almost with no exceptions, is seen as burdensome and avoidable regardless of the fact the scheme itself is the least burdensome immigration instrument in the UK (2019, p. 1).

The East European Resource Centre stresses here that the EUSS was put into place during a period of high uncertainty (specifically, of whether Brexit would happen and, if so, what exactly would be required of people) and changes to people's rights. On top of this identifying its place in this broader context of uncertainty, much of the way the EUSS has been understood so far (see Ch.2) has tended to focus on government decision-making and has understood the scheme as a poorly- or even maliciously designed IT system. The Home Office, as either a malicious or incompetent actor, and responding to public anti-migrant sentiment, is depicted in the existing literature on the scheme as having designed and implemented the EUSS with the aim of monitoring and forcing out EU citizens living in the UK. Much of the conversation around the EUSS has focused on this kind of criticism.

1.1. Digital Borders and STS: Why STS Researchers Should Care About the EUSS

Science and Technology Studies (STS) and Information Systems (IS) researchers should care about the EUSS and projects like it. There are two reasons for this: 1) The EUSS is part of an ongoing application of digital technology to border control and policing, with significant harm to people already demonstrated, and should be a cause for concern; 2) STS and IS, with their history of producing rigorous empirical evidence about how technologies work in practice, have a compelling toolkit with which to intervene in the discussion about the EUSS but have yet to do so.

Migration and border control feature heavily in contemporary political discussions and are highly politicized issues. Within the field of migration and border control, information and communication technologies (ICTs) are increasingly being deployed to monitor and restrict the movement of people across borders (Latonero et al., 2020; Metcalf and Dencik, 2019). This echoes wider applications of ICTs across government, highlighted in the longstanding interest among social scientists in electronic government (e-government), defined by Marche and McNiven (2003) as “the provision of routine government information and transactions using electronic means, most notably those using internet technologies, whether delivered at home, at work, or through public kiosks.” The use of ICTs in government and border control includes technologies such as interoperable biometric databases, body scanners, facial recognition technology, emotion recognition technology, and automated border control gates. While these technologies are argued to have benefits with respect to national security and efficiency at ports (Labati et al., 2016), they also raise concerns about privacy, civil liberties, and discrimination (Dencik and Madianou, 2020). Social research looking at border control ICTs is a promising and fast-developing field of inquiry, with researchers examining the design of these technologies and their social implications. One way to study these technologies, which this thesis seeks to contribute to, is through Science and Technology Studies (STS).

STS emerged in the late 20th Century (depending upon the history being read), integrating the fields of the history of technology in the United States and the sociology of science and technology in Europe, in part backed by state interest in technology regulation (Vermeulen and Bijker, 2018; Bijker, 2013). Central to the field is a concern with the social aspects of technological change and adoption, with growing interest in innovation and emerging technologies. STS research is characterized by an empirical focus and constructivism, showing how technologies are used in everyday life and attempting to understand the mundane practices that underpin the design of technological artifacts (Mackenzie and Wajcman, 1985; Latour, 1987).

Following the empirical character of STS and IS research, this thesis seeks to investigate the EUSS as it is being implemented and adopted for immigration checks. It aims to produce data that will be useful in understanding the EUSS as a flexible versus deterministic IT project and also how one might study projects like it. The thesis also seeks to address methodological questions, including the use of web scraping and online data to study migration control.

There are several anticipated contributions to existing scholarship on digital border control and the EUSS. The first is empirical, and the second is methodological. By examining the implementation of this system and its integration into the lives of status holders and status checkers – rather than how it works on a policy, legal, or design level – the thesis aims to contribute to the work of researchers at the intersection of STS and critical security studies looking at the social dimensions of national security and border control technologies used at the Schengen Area borders (see Ch.2, Sec.3.1). As a contribution to this research, the thesis demonstrates the immense work of users and intermediary groups in shaping the EUSS, and that such dynamics of adoption and user innovation identified elsewhere in STS and IS research on information systems and infrastructures, apply to migration control technologies. This is expected to inform both STS and IS research in its continued engagement with border control technologies, as it can help to understand how they work in practice and the dynamics that governments should take into account when implementing such systems. Doing so aims to show a potential avenue for sustained engagement of STS and IS researchers with border control technology. The thesis also outlines methodological questions for studying digital border control, particularly those surrounding collaboration, access, and ethics.

1.2 Research Questions

In response to the public discussion around the EUSS, existing scholarly work within STS and critical security studies, and my theoretical interest in social learning processes in border control, the thesis aims to answer the following research questions:

RQ1 What problems did people have applying for the EUSS and using it for immigration status checks?

RQ2 What sort of intermediaries emerged to support the implementation and adoption of the EUSS and what were their activities?

RQ3 How did applicants and status holders employ workarounds to respond to problems when using the EUSS?

RQ3.1 How can the concept of workarounds help to understand the implementation of the EUSS?

RQ4 How can the experience of Brexit and the EUSS inform the application and development of STS concepts, such as innovation intermediaries, workarounds, and social learning, to expand upon existing accounts of border control technology in offering nuanced examinations of how these technologies are adopted in everyday contexts?

Table 1. Research Questions

These research questions were developed on the basis of my review of existing literature on the EUSS and border control and seek to contribute to ongoing STS research on border control IT (see Ch.2). They were further motivated by my overall goal of documenting how the EUSS worked in practice and what people did in response to problems they experienced. To answer these questions, a multi-method implementation study was conducted, inspired by the work of STS researchers working on distributed information systems (see the scholarship cited in Ch.3) and motivated by an interest in seeing how an identity and access management system functioned “in the wild” (Luger and Rodden, 2020). Due to practical and ethical concerns discussed in Ch.3, this thesis presents the results of the interview portions of the study, providing qualitative insight into the ways the EUSS worked on an everyday basis. In Ch.2, I present these RQs again and how they are developed based on and addressed in light of my theoretical framework and a review of existing literature.

2. A Description of the EUSS

This section provides the reader with a general policy and technical understanding of the EUSS, what it is, and how it works. The purpose is to provide the reader with background knowledge about the project. The section, while placed in the introduction, is based on a background analysis of policy documents, academic literature, and grey literature and is meant to trace out the process of how people are ideally supposed to interact with the EUSS and how it is supposed to work legally and technically.³

In 2016, the UK voted to withdraw from the European Union (hereafter, Brexit).⁴ This withdrawal created uncertainty for UK citizens living in the EU and EU citizens living in the UK, as the legal basis for their

³ The reader might ask why such a semi-empirical section is placed in the introduction as opposed to alongside the empirical chapters of the thesis. Although non-standard, the decision was made to place this section in the introductory chapter in order to provide a background understanding of the EUSS that can a) inform reading of the empirical chapters, and b) start providing a foundational understanding of how the EUSS should work that will be empirically examined.

⁴ A full description of Brexit and its implications for UK and EU citizens beyond the EUSS (for labor and educational mobility, family reunification, trade, taxes, data protection, human rights law, Northern Ireland, and so forth) is outside of the scope of the present study. However, extensive research has been conducted on this subject, and I can recommend the work of UK in a Changing Europe (<https://ukandeu.ac.uk/>), FreeMovement

residence, Freedom of Movement (FoM), was to be abolished. FoM is an open-border regime still in effect across much of the EU, which will be discussed in Sec.2.1. With the end of FoM rights between the EU and the UK, EU citizens living in the UK have lost this legal basis for doing so, and the EUSS provides a new legal basis for continued residence (indefinite leave to remain (ILR) and limited leave to remain (LTR), see Chapter 3). The EUSS is both a policy instrument and an IT project, consisting of

1. An immigration status, namely indefinite leave to remain (ILR, or Settled Status) and (before a court case overturning this) limited leave to remain (LTR, or Pre-Settled Status) for EU/EEA citizens and their family members (along with some other groups) through
2. An online application that assesses an applicant's eligibility for this status. Applicants use a smartphone or paper application to send their details to the government. These details are automatically checked by the Department of Work and Pensions (DWP) and Her Majesty's Revenue and Customs (HMRC) records for evidence of residency in the UK.
3. A means of viewing and showing evidence of this status online (hereafter, digital status), in which a status holder can enter their date of birth (DOB) and ID document number and go through a two-step verification process to access a government website.

The rest of this section explores these three aspects of the EUSS sequentially. First, the section looks at the legal status the EUSS provides. Second, the section describes the application procedure and how the statuses of successful applications are to be checked. Finally, the section offers an overview of EUSS rules and procedures for non-EU nationals and accessing support with the EUSS.

2.1 The legal status

In this section, I address the legal status provided by the EUSS. The EUSS is a response to the cessation of freedom of movement (FoM) rights between the UK and the EU. As quoted above, the EC defines FoM rights as “the right of EU citizens and legally resident third-country nationals ([non-EU citizens] in accordance with the Treaty establishing the European Community) to move and reside freely within the territory of the EU Member States” (EC, n.d., p.1). The idea of abolishing border checks between EU countries emerged from calls by the then-Belgian prime minister to expand European integration in the 1970s. FoM as a set of rights was established gradually through a series of legislation, first established for workers in 1957 with the treaty establishing the European Economic Community and expanded by the Treaty of Maastricht, the Lisbon Treaty, and the Schengen Agreement in 1985 (Marzocchi, 2023; Maciejewski, 2023). Through the successive passing of this legislation, FoM rights were expanded to all Schengen nationals and their family members (Koikkalainen, 2021).

The FoM regime and the gradual reduction of restrictions between many European countries was in contrast to prior developments in the 20th Century in continental Europe in which border controls were either established or reestablished at the end of the First World War (WW1). For instance, as Torpey (2002) documents, France, Germany, Italy, and the United Kingdom, alongside the United States, in response to these developments, began requiring passports and visas for foreign nationals entering their countries and their own nationals attempting to leave. In contrast to the periods prior to this, the end of WW2 saw the redistribution of populations into national groupings, with a fair bit of violence done to

(<https://freemovement.org.uk/>), and the London School of Economics (<https://blogs.lse.ac.uk/brexit/>) as reference points for this subject.

those who fell between categories (Joppke, 2005). Political scientists often associate these events with rising state capacity to manage and control their populations (O’Dowd, 2002).

Writers have widely praised the FoM regime for allowing people to move freely in search of work and better lives (Sardelić, 2019). There have been theorized several types or generations of EU to UK migration, including the post-A8 accession migrants and the post-2008 recession migrations, each with their own sets of motivations for taking advantage of FoM rights in order to relocate to the UK (Antonucci and Varriale, 2020). Brexit and the Withdrawal Agreement signed between the UK and the EU, the legal basis for Brexit, formally put an end to these FoM rights.⁵

The EUSS provides two legal statuses to replace the FoM rights voided by the Withdrawal Agreement. As mentioned above, the EUSS enables eligible individuals to apply for either Settled Status or Pre-Settled status (which are EUSS-specific phrasings of Indefinite Leave to Remain (ILR) and Limited Leave to Remain (LTR)), depending on their length of continuous residence in the UK. Within the EUSS, ILR is referred to as Settled Status, and LTR is referred to as Pre-Settled Status. If a person has been in the UK for five years, they are eligible for Settled Status. Those who have yet to accumulate five years of residence should be granted Pre-Settled Status. Settled Status and Pre-Settled Status grant most of the rights recipients enjoyed under FoM rights, such as the right to live in the UK, the right to study, the right to work, and the right to rent. There are exceptions, however, including the right to claim benefits – for which Pre-Settled Status holders must pass a right-to-reside test – and university fees, for which Pre-Settled Status holders must pass an ordinary residence test (Mackley, 2019; The UK Council for International Student Affairs, 2021).⁶ Additionally, since the start of this thesis, there has been a successful legal challenge to the EUSS, which has rules that Pre-Settled Status cannot expire simply because someone fails to reapply for Settled Status (although it can still expire for other reasons, such as spending too much time outside the country), and the government has planned to automatically grant some number of Pre-Settled Status holders Settled Status (Benn, 2021).

One of the more salient aspects of the EUSS relates to the population to which it is granted and how they have historically accessed public services in the UK. This distinguishes the EUSS from traditional visa schemes and also the refugee processing that has been the subject of much of the STS research on border control that this study draws upon (see Ch.2, Sec.3). While existing literature on the EUSS rightly treats it as a migration scheme or through the language of transnational migration (see Ch.2), doing so only tells part of the story. Many EU citizens and their family members applying for the EUSS are already living in the UK and have done so for years via FoM rights, never subject to immigration controls, and the EUSS provides a status that is meant to replace these rights upon their being removed. From one day to another, this population had their legal right to live in the UK voided, and the EUSS is meant to replace that right. In this case, immigration controls and the requirement to apply for an immigration status are applied to an already-resident population, making the EUSS potentially easier to think about with reference to national ID schemes or passport allocation regarding the experiences of applicants and the barriers that the scheme

⁵ For a more in-depth discussion of the Withdrawal Agreement, see Borragán and Smismans (2020) “The law and politics of exit from the EU.” Unfortunately, a full discussion of the Withdrawal Agreement is beyond the scope of the thesis.

⁶ These tests and the legal background behind them are unfortunately beyond the scope of this thesis.

erects for them. This distinction, alongside the fact that the EUSS is technologically distinct from current British visas (see the next two sections), suggests that approaches to studying it and the kinds of problems people face with it may have as much to do with the system's interaction with other systems for public service provision as it has to do with the effectiveness of the British state in developing the project. This is because the scheme needs to effectively replicate all the existing rights and abilities people had to access services, now under a new immigration scheme. Such issues and theoretical concerns will be explored further in the thesis, in particular in Ch.5.

Finally, while this will not be discussed in detail due to it being beyond the scope of this thesis, for EU nationals, even during the era of FoM, there was not unfettered access to the labor market. Before the EUSS, there were also similar registration schemes, such as the worker registration scheme (WRS) for A8 nationals (Doyle et al., 2006, p. 21). "The WRS was introduced in May 2004 to regulate access to the labor market of migrants from the Accession 8 countries [and] has been administered by the UK Border Agency (UKBA), the Department for Work and Pensions (DWP), HM Revenue and Customs (HMRC) and Communities and Local Government (CLG)" (Migration Observatory, 2023, p. 1). The WRS was one of the first efforts to track and restrict EU nationals' access to the labor market. There were issues with the WRS, however, since some people did not know they needed to apply, and the government was criticized for claiming such failure to apply meant those people were ineligible for benefits (Yeo, 2018). This is to say that the EUSS was not the first barrier imposed between EU citizens in the UK and the right to work, the right to rent, and other aspects of social participation.⁷

2.2 (Online) Applications for Settled Status and Pre-Settled Status

In this section, I discuss the technical and legal details of the EUSS application. Applications for the EUSS followed two routes in general. The first was the prescribed route, in which an applicant would download the smartphone application and begin an application (Yeo and McKinney, 2019). In this option, applicants were first to provide their personal details via the smartphone application and then further information through an online form. There was also a paper application that could be filed by applicants. According to Barnard and Costello (2021, p.1), paper applications could be filled out by individuals with derivative rights, no ID documents, and people who are unable to use the online application system, and they refer to these as some of the most vulnerable applicants to the scheme. Most people followed the process for applying outlined in Figure 1.

⁷ See Sec.2.3. of this chapter for a discussion of internal border checks.

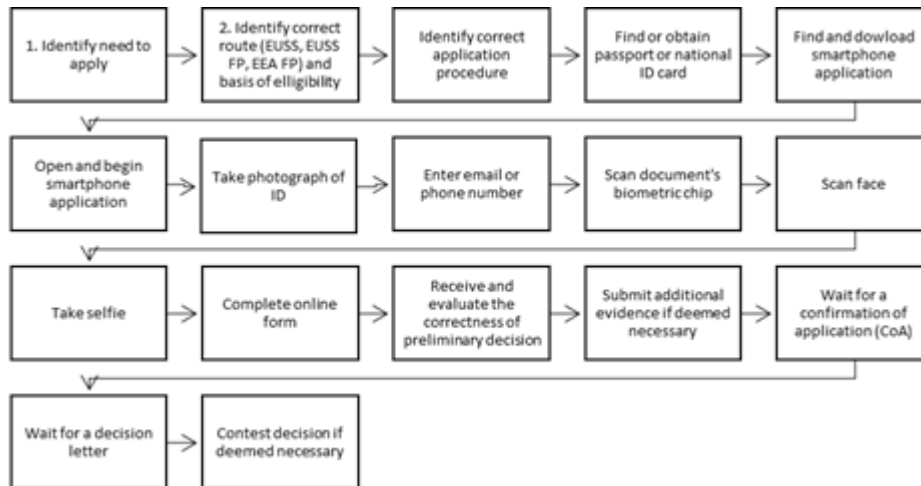


Figure 1. The EUSS Application Process. Based on the chart by Tomlinson et al. (2022).

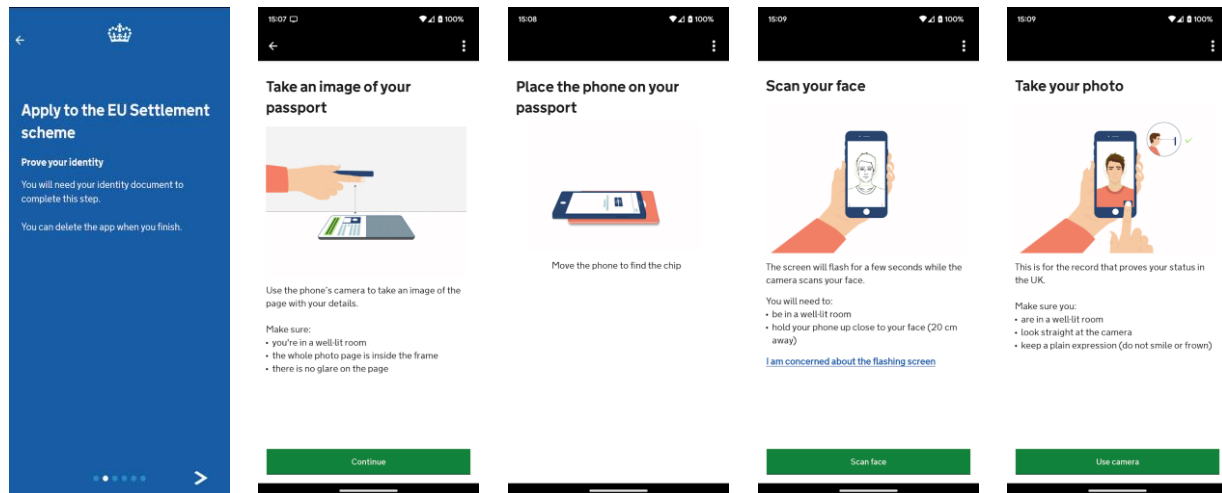


Figure 2. Instructional Images for the “EU Exit: ID Document Check” App, Google Play Store.

Applications to the EUSS followed a specific timeline. To apply for the EUSS, one needed to be in the UK by December 31st, 2020 (the end of the Brexit transition period), and applications needed to be filed by June 30th, 2021. This is in contrast to a declaratory system in which it would be enough to register one’s presence in the UK prior to immigration checks (Smismans, 2019; Jabłonowski, 2020). As mentioned above, the EUSS initially had two separate statuses that a person could be granted: Settled Status and Pre-Settled Status. Once someone was granted the latter, a second application was required before its expiry, introducing two deadlines for applicants initially granted Pre-Settled Status. However, as noted above, this double application process is no longer in place, and Pre-Settled Status holders are to be provided with Settled Status automatically, according to current plans.

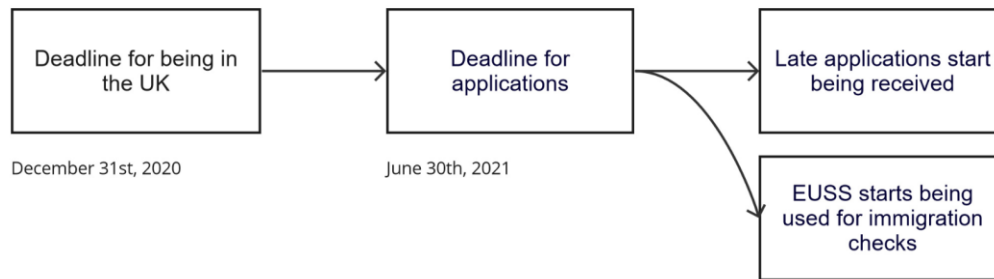


Figure 3. EUSS Timeline.

2.2.1 Automated Checks

Upon applying, application data are then checked against existing records from the applicant from Her Majesty’s Revenue and Customs (HMRC) and the Department of Work and Pensions (DWP) in order to infer how long an individual has been living in the country. This approach to checking applications removed the need for many applicants to submit documents, and the Home Office routinely advertised how many applications they were able to apply via the online system. Tomlinson (2019b, p. 1) describes how the EUSS was a completely automated application process, with no details apart from passport information and biometrics to be submitted:

The automated part of the application process uses an algorithm to check HMRC and DWP data for proof of residency. Specifically, three fields of data—the applicant’s name, date of birth, and National Insurance number—is sent automatically to the DWP and HMRC. Once this information has been received by those two departments, it is transferred to a ‘Citizen Matching Layer’, which identifies the applicant and searches the respective departmental databases for details about the matched applicant. The information is then relayed back to the Home Office and transferred to its ‘business logic’ — an algorithm which is yet to be disclosed publicly — which processes the information to establish the period of continuous residence in the UK. [...] Where the data checks do not result in a pass, applicants will be required to submit additional evidence for those periods not sourced by the automated data checks. This is where human engagement begins.

The scheme has been both lauded and condemned as an example of automation in the immigration sector (Booth, 2019; AlgorithmWatch, 2020), and the use of a smartphone app has been extended to other immigration routes, such as student and work visas.

Some applications are then accepted, and some are rejected. For accepted applications, initially, people were either granted Settled or Pre-Settled Status, corresponding to whether they had accumulated five years of residence in the UK. For rejected applications, people were often encouraged by the government to reapply (Benn, 2022). Others appealed their decision either through administrative or judicial review, which had a remarkable success rate (Welsh and Jablonowski, 2022).

2.3 Online Status Checks

In this section, I discuss the use of the EUSS to check immigration statuses. One thing that distinguishes the EUSS from other immigration statuses is that its specified mode of immigration checks is remote and asynchronous. The EUSS has been widely characterized by its use of a so-called ‘digital immigration status’ (Tomlinson et al., 2022). The notion of a digital status was used in the Withdrawal Agreement:

The host State may require Union citizens or United Kingdom nationals, their respective family members and other persons, who reside in its territory in accordance with the conditions set out in this Title, to apply for a new residence status which confers the rights under this Title and a document evidencing such status which may be in a digital form (Withdrawal Agreement, Part 2, Art. 18. 1).

The so-called digital status works by logging into a government website by entering one’s date of birth and ID document number, getting a security code sent to one’s phone or email, and reentering the security code. At this point, the status holder can see a record of their immigration status. A different code, called a share code, can then be generated. This code can then be provided to someone checking the immigration status (such as a landlord or an employer), who is to type the code back into a different website to see the status holder’s records online.

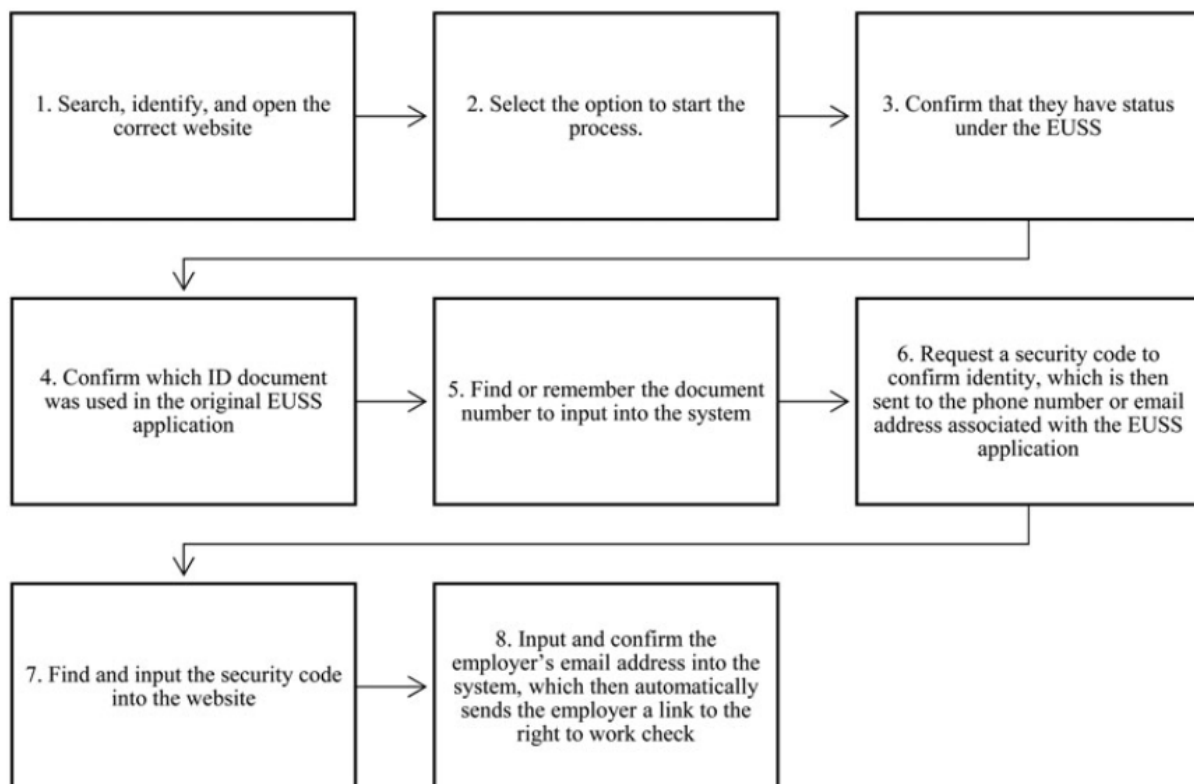


Figure 4. “Steps Required of Digital Status Holder to Prove Status for the Purposes of Employment.” From Tomlinson, Maxwell, and Welsh, 2022, “Discrimination in digital immigration status”, p. 315.

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Home > Visas and immigration > EU, EEA and Swiss citizens

View and prove your immigration status

If you have been told you can view your immigration status online you can use this service to:

- get a 'share code' to prove your status to others, for example employers
- update personal details in your UK Visas and Immigration account, for example your passport number or email address
- check what rights you have in the UK, for example the right to work, rent or claim benefits

Who can use this service

You can use this service if you:

- have settled or pre-settled status
- applied for a visa and used the 'UK Immigration: ID Check' app to scan your identity document on your phone

You cannot use this service if you have a vignette in your passport or a biometric residence permit to prove your immigration status.

Related content

- [Apply to the EU Settlement Scheme \(settled and pre-settled status\)](#)
- [Prove your right to work to an employer](#)
- [Private renting](#)

View or prove your immigration status

You'll need:

- details of the identity document you used when you applied (your passport, national identity card, or biometric residence card or permit)
- your date of birth
- access to the mobile number or email address you used when you applied - you'll be sent a code for logging in

Start now >

Figure 5. Screenshot From the Gov.uk View and Prove Your Immigration Status Website.

These status checks are performed by universities, employers, banks, and border guards. These immigration checks are part of the UK's robust system of internal migration checks, with devolved immigration checkers in the private sector often doing the work of border guards (Griffiths and Yeo, 2021; Qureshi et al., 2020). These individuals are called status checkers for the purposes of this thesis.

What is key to understand about this process of checking status using the online system (often called the View and Prove system, or V&P) is that it takes time to do and requires the carrying out of multiple steps. Each step must be undertaken before a share code can be given to a status checker, and it may take several minutes to complete them all. These steps make it difficult to conduct immigration checks using the EUSS face-to-face in the way that is done in the visual inspection of Biometric Residence Permits (BRP) for other UK visa routes, or at the very least more time-consuming; it also subjects the process to a range of potential technical errors, detailed further in Ch.2.

2.4 Family Members and Non-EU Citizens

In this section, I describe how non-EU citizens are supposed to use the EUSS. Despite the name, the EU Settlement Scheme received a significant number of applications from non-EU citizens. Non-EU citizens can apply to the scheme under a number of situations, such as being the family member of an EU citizen

or holding a derivative right of residence. In addition to simple cases of spouses, children and parents of EU nationals, the EUSS accepted applications from, for instance, Surinder Singh cases (i.e., non-EU family members of British citizens applying for Settled Status when returning from living in another EEA state with the British citizen), Zambrano cases (i.e., non-EU carers of a British citizen) and Lounes cases (i.e., family members of EU citizens who have become UK citizens). However, this is subject to certain conditions, such as being a family member of an EU citizen who was residing in the UK before 31 December 2020, and having established that family relationship by a certain deadline.

Route Name	Description
EUSS	The standard route for applying for Settled Status or Pre-Settled Status. Residence in the UK must have been established before December 31st, 2020.
EUSS Family permit	Allows family members to join their EEA family members in the UK for a limited period before applying for Pre-Settled Status. In order to apply for the family permit, the sponsoring EU/EEA-citizen family member must have been granted Settled or Pre-Settled Status, and their relationship needs to have been established before December 31st, 2020
McCarthy Cases	McCarthy cases are cases in which the non-EU/EEA citizen family member of a dual UK-EU/EEA citizen can apply for a family permit via the EUSS provided they had a right to permanent residence prior to July 16th, 2012.
Surinder Singh	Allows an EU/EEA or non-EU/EEA family member of a British citizen living in another EU/EEA country to apply for status under the EUSS when returning to the UK.
Ibrahim and Texiera	These are routes in which the non-EU/EEA primary carers of an EU/EEA citizen child can apply for status under the EUSS.
Chen	This route allows the primary carer of an EU/EEA citizen in education to apply for status under the EUSS.
Zambrano	Zambrano cases are cases in which a non-EEA primary carer of a British citizen child applies for leave to remain via the EUSS based on this relationship.

Lounes	Lounes cases are applications made to the EUSS for a non-EU/EEA citizen family member to join an EU/EEA citizen who has become a British citizen prior to the application.
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Table 2. EUSS Application Routes.

Finally, important to note is that non-EU citizens, upon successfully applying to the EUSS are granted a biometric residence card (BRC), a plastic card with a biometric chip that can be used to prove their status. They can also use V&P (see above) but until April 2022 they had the choice of authorization using the BRC as well. This was in contrast to EU citizens granted status under the EUSS, who can only use V&P and are not granted a BRC. However, as of April 2022, this changed, and now even holders of BRPs and BRCs are required to use V&P (not their physical card) for right to work and right to rent checks.

3. Outline of the Thesis

Here, concluding the introduction, I outline the chapters of this thesis, the research they present, and the contribution they make to answering the study's research questions. This is meant to orient the reader around the structure of the thesis.

Chapter 2 Literature Review

Chapter 2 provides a literature review on the EU Settlement Scheme (EUSS). In this chapter, I delve into the existing literature on the EUSS and the literature and theoretical frameworks that informed this study. The literature review is divided into two main parts. First, I discuss the literature and existing research on the EUSS, showing how this work can be characterized by a design criticism approach, examining the harmful aspects of how EUSS is designed and deployed by the government. Second, I explore the existing academic literature on migration control and why this is not the theoretical framework adopted in this thesis. Finally, I review work at the intersection of STS and critical security studies and why this is the theoretical framework adopted for this thesis.

Chapter 3 Methodology

The methodology of my doctoral was initially based on a mixed-methods approach, combining interviews, a report form, and social media data analysis. The goal was to understand how the EUSS was used for status checks and how things worked on an everyday basis to provide context for policy-focused writing about the project. Due to ethical and practical concerns, only interview data is used in the final version. Ch.3 discusses the methodology of the thesis, how it was developed in response to anticipated challenges studying the EUSS, how data was collected and analyzed, and the concerns that led to the omission of social media and report form data.

After describing the methodology, I then move on to presenting the empirical chapters of the thesis. Each empirical chapter begins with a recap of the theoretical framework and how it relates to the findings presented. There is also some contextual background provided to help the reader orient themselves around the findings.

Chapter 4 User Problems with the EUSS

This chapter is based on a qualitative examination of people's problems with the EUSS. Interviewees described the problems they had with applying for the scheme and proving their statuses. The chapter explores how the EUSS, particularly its method of proving status using share codes (see Ch.1, Sec.2), provided problems due to conflicts with existing practices and IT for checking statuses at border checks and in the private sector. It argues that the EUSS should not be characterized as a stand-alone immigration system but an IAM project with links to other parts of British e-government that shape its outcomes.

Chapter 5 Support Networks and Intermediaries

Ch.6 empirically examines how people received support in response to these problems with the EUSS. The chapter looks at the role of intermediaries, including the third sector, employers, and professionals (such as lawyers, legal advisors, human resources officers, etc.). This analysis builds upon the analysis of problems done in Ch5, presenting the finding that support networks were meaningful for determining user outcomes with the EUSS. In interviews, applicants and status holders provided fairly good indications of their interactions with support networks and in interviews with civil society employees. The chapter traces the emergence of this network of civil society and informal support and their contribution to the implementation of the EUSS.

Chapter 6 Workarounds

In Ch.6, the final empirical chapter of the thesis, I address the ways in which people employed workarounds in the use and development of the EUSS. This includes applicants, status holders, and status checkers who used the EUSS in ways that contradicted the official guidelines for how it should be used; it also includes changes to the project over time. Doing so is meant to emphasize the extent to which coping with the EUSS was an ongoing project and how it was used was significantly more flexible and negotiated than was depicted by the government. The chapter also demonstrates the utility of STS and IS literature on workarounds for understanding border control technology.

Chapter 7 Discussion and Conclusion: The EUSS and the Future of IAM for Border Management

This chapter provides an overview of the findings of the thesis, how they address the research questions, and their implications for the future of border control IAM projects. The chapter first recaps the findings and their implications. It then explores the limitations of the study and what I would do differently were I to conduct the study again. Finally, the section describes opportunities for further research, both on the EUSS and elsewhere.

I will suggest that research on the implementation and everyday use of projects like the EUSS is important to both policy and academic audiences, as it helps to understand aspects of these projects that may be overlooked in policy analysis and that may have harmful impacts on vulnerable people. At first glance, this might seem like a fairly minor methodological point, but it is nonetheless important. While others have done important work to understand the impacts of the EUSS, particularly on vulnerable people such as homeless people and victims of trafficking, by looking at the EUSS using concepts from

STS, the thesis aims to highlight the mundane technological functioning of the EUSS and its impacts. The thesis also has relevance to the further advancement of STS and IS research on border control, offering a set of concepts that can help to explain internal border control projects and that offer a perspective on these projects that is both politically salient and sensitive to limits of government control over IT systems. Presuming the EUSS is not the last e-visa project to follow the model of online, remote, and asynchronous applications and authentication, the findings should have relevance beyond the EUSS.

Chapter 2. Literature Review and Theory:

From Design Criticism to Social Learning: How to Study Migration Control IT

Summary

The study looks at how a border control project is implemented. In order to begin doing so, this chapter presents an overview and a critical account of existing research on the EUSS and related projects, showing how border control IT has been conceptualized and studied in existing research. Following the RQs, I explore existing answers to these questions in the literature. These bodies of literature offer different answers and stories of how migration control identity and access management (IAM) ought to play out and how the EUSS should work and impact its users. Throughout the chapter, I follow the following criteria for assessing the various theoretical approaches reviewed: their internal coherence, their empirical plausibility in the sense of being based on empirical research and offering an empirically-supported view of migration control IT as is used day-to-day, and their relevance to addressing the present study's research questions. Based on these criteria, I find the work of researchers at the intersection of STS and critical security, border, and migration studies to offer a theoretical perspective that has strengths for understanding projects like the EUSS.

In the first part (Sec.1), I review research on the EUSS and how researchers have studied it thus far. This literature is primarily arising from a legal and policy disciplinary background. I argue, based on a review of this literature, that this literature advances a design criticism perspective, broadly similar to classical technology criticism in STS, which criticizes the EUSS for careless or malicious design choices on behalf of the government.

In the second part (Sec.2), I explore the various theoretical approaches to IT systems, such as the EUSS, that underpin this literature. I first explore the legal and critical migration studies perspectives on the EUSS and social sorting (2.1) and how they understand digital technology border control (2.2). Finally, I examine responses to this literature within political science, namely those under the rubric of the gap hypothesis and policy implementation (2.3).

Finally, Section 3 advances an alternative to this literature. This alternative, implementation research in STS, has applied a range of concepts used or developed in STS – such as implementation, interoperability, social learning, innovation intermediaries, and workarounds – to understand how systems like the EUSS play out on the ground. While the implementation and gap hypothesis literature in political science encourages researchers to look at ground-level variation in border control practices, there needs to be more study of the technical dynamics of migration control identified in the security literature (2.1). An emerging field of scholarship in STS and IS has bridged this gap, consisting of both Actor-Network Theory (ANT)-inspired and social learning approaches applied to understanding the dynamics of border control IT implementation. It should be noted that while I use the term implementation as a plain-English shorthand for the ways in which border control IT is fitted into the practices of people using it and how

these people respond to it, the scholars referenced in Sec.3 have their own specialist vocabulary for this process which will be described throughout the section.

This literature forms the basis of the theoretical framework of my thesis, offering a range of concepts that I use to interpret the data I collected about the EUSS. I explore its implications for further study in Sec.3; its strengths, which I outline throughout Sec.3, are as follows. First, this framework views migration control technology and its effects as something to be explained by changing and contingent sociotechnical relations rather than a straightforward consequence of state efforts to control migration. Second, it looks for the same dynamics in the implementation and adoption of migration control IT as are looked for in IT used in other domains, and thereby can account for the presence and contribution to IT development of innovation intermediaries, workarounds, and interoperability between different e-government systems.

Overall, the chapter presents a case that the theoretical perspectives taken by legal and policy scholars who have dominated discussions of the EUSS offer theoretical assumptions about how the EUSS will play out in practice that can be expanded through empirical investigation of social learning. The literature at the intersection of STS and critical border, migration, and security studies that is discussed in Sec.3.1 is applied throughout this thesis to expand the perspective of existing research. The value of this theoretical perspective is that it helps researchers understand how border control IT systems work in practice, especially how they impact and sort populations, the role of intermediary actors, and the role of non-standard use patterns.

1. Criticism of the EUSS in Existing Research

In this section, I explore and theorize about existing research on the EUSS. The goal of the section is to provide a critical and STS-based account of existing research, to show the common themes throughout and areas that might benefit from further analysis from an STS or IS lens. Much of the literature on the EUSS is from legal and policy scholars and migration studies by sociologists. It highlights the changing role of EU nationals in the UK as a group of migrants whose position in society is unclear, alongside issues of discrimination and differential impacts arising from the EUSS. There is also substantial gray literature by activists, lawyers, and civil society groups. This gray literature, which makes up a good deal, if not most, of the existing work on the project, is highly critical and deals with the issues of the EUSS for their specific communities. In general, this literature can be characterized as a kind of technology criticism, and existing research on the EUSS looks at the EUSS from a state-oriented perspective, criticizing its design and implementation by the Home Office.

Policy and legal scholars have stressed the role of the EUSS within broader trends in British immigration control. The EUSS emerged as a technological system in the context of substantial political and administrative changes in the UK. Historicizing the EUSS allows researchers to identify how it is a successor to previous immigration IT projects and carries forth the discriminatory policies of UK border control. As emphasized by policy scholars, the EUSS is part of the increasing crackdown on migrants, increasing authoritarianism in the British government, and part of the hostile environment policy (Kempny, 2022; Griffiths and Yeo, 2021). Scholars – and it is almost exclusively policy and legal scholars writing about the EUSS – have interpreted the project within broader critiques of the Home Office and British immigration policy, describing the technological elements of the project as a reflection

of the racism and administrative incompetence within the department. This section outlines this literature, referencing how scholars and researchers have addressed the scheme's design (Sec.1.1) and its impacts on vulnerable groups (Sec.1.2).⁸

1.1 Critical Perspectives from Policy Researchers

In this section, I look at critiques of the EUSS from policy researchers. In my review of the literature, I have identified one of the most dominant approaches to the EUSS to be critiques of its policy and design. Such critiques can be characterized by a tendency to focus on and study specific design aspects of the EUSS, treating it as a stand-alone IT system and legal framework and identifying how these are, in various ways, detrimental; this is in contrast to the literature described in Sec.3, which tends to focus on the interaction between a wide range of border control IT systems, rather than discrete design and policy choices. These design aspects include policy choices (e.g., a deadline and the distinction between Pre-Settled Status and Settled Status) and technical choices (e.g., the use of share codes). The key point here is that literature tends to focus on choices made within the bounds of the EUSS as a distinct project.⁹ As a complement to such an approach, the wider view of design to be found within STS and IS, which focuses on the interconnections between different systems rather than choices within any single one and which I see as a valuable complement to existing work on the EUSS, will be discussed in Sec.3.

Design criticism in the EUSS case examines the project from what STS and IS scholars would call a systems perspective (Monteiro et al., 2013). As Hanseth (2010, p. 5) writes, “Just as the tool metaphor makes us believe that the users are in complete control, so does the notion of systems make us believe that we through our IS design methodologies are in complete control over the design process and accordingly that we can design an IT solution exactly as we (and the users) want to.” For Hanseth, this is a distinction between approaching information systems as discrete projects versus interlinked with others. Treating the EUSS from such an information systems perspective¹⁰, as opposed to via concern with systems of systems or with infrastructures, frames its design and implementation as relatively well controlled by and under the domain of one specific set of actors: the Home Office. This is not to say that existing literature on the EUSS has not acknowledged the role of other actors (e.g., other government departments and border guards), but rather that the primary focus of critiques has been on the Home Office and the policy underpinnings of the EUSS.

⁸ As an aside, it should be briefly mentioned that there is other research on the EUSS that has a different approach than the one outlined in this section. For instance, there has been extensive literature on how Brexit and the EUSS impact the migration decisions of EU to UK migrants (Clifton-Sprigg et al., 2023), how users understand it, and how it changes their sense of belonging (Sotkasiira and Gawlewicz, 2021). Such scholarship is somewhat distinct from critical work about the EUSS’ design, which is what this thesis aims to build upon.

⁹ It should be noted that this literature on the EUSS is distinct from wider work on design within STS and IS, for instance, which often questions simplistic views taken by social scientists on design (see Hyysalo, 2020). Critical literature on the EUSS does not typically engage with these questions, since it is usually a far more pragmatic literature focused on holding the government to account. Characterizing it as design criticism is to highlight how it tends to understand technology, not to open up discussions of design and implementation within STS, which will be addressed in Sec.3.

¹⁰ The use of the term systems theory with reference to IS should be contrasted with the use of the word in the work of systems theorists like Luhmann (2012).

Design criticism literature on the EUSS is typically based on either survey research or legal and policy analysis (Buelmann, 2020; Jablonowski and Pinkowska, 2021; Tomlinson et al., 2022; Turcatti and Vargas-Silva, 2022). These often overlap methodologically, with some surveys drawing on policy analysis for their findings and some critical policy scholarship drawing on surveys as resources to understand the impacts of policies. These methodologies identify legal and technical flaws in the EUSS that will negatively impact applicants and status holders. Scholars draw on the fields of migration studies and its longstanding criticisms of British internal immigration control (Tyler, 2010; Webber, 2022) to identify how the EUSS restricts access to social services and disadvantages EU nationals in the context of the hostile environment (Griffiths and Yeo, 2021). In Section 3, where I present the theoretical framework informing the study's methodology and the interpretation of its findings, I will show how such a perspective can be complemented by studying the interactions between the EUSS and other systems and by drawing on a rich, emergent research program in STS and IS. In the remainder of this section, I look at criticisms of the application rules and procedure – including the use of automated decision-making –, the digital status, and the conduct of the government when putting the scheme into place.

1.1.1 Criticisms of the EUSS Application Process?

In this section, I describe criticisms of the EUSS application process. There are three related aspects of this: a) how the EUSS worked legally policy-wise, with its deadline, the requirement to provide evidence, and the initial distinction between Pre-Settled and Settled Status, and b) how status was to be proved using the EUSS, namely through an online system, and c) the poor information and support offered to applicants and status holders by the government. Many of the criticisms made of the EUSS have been documented to have material impacts on people (e.g., loss of job opportunities and denied entry at borders), but the full impacts of many concerns about the EUSS will be seen over the years to come as the scheme is used more and more.¹¹

Some authors have expressed concerns about how technical decisions – for instance, automatic checks of applications to pension and tax records discussed in Ch.1, Sec.2.2.1 (Booth, 2019; Welsh and Jablonowski, 2022) – and legal decisions – like the need to make an application by a certain deadline (Smismans, 2019) and the creation of Pre-Settled Status as a time-limited immigration status for people without five years of residency (Fernández-Reino and Sumption, 2022, p. 1) – have potentially kept many people from applying for the EUSS. The relationship between the technology and the policy of the EUSS is fairly close in existing literature, partly because the design and operation of the EUSS are assumed to flow from government policy.

Regarding the deadline, Smismans (2019) argues that setting a deadline for filing applications to the EUSS will lead to some people needing help accessing their rights under the EUSS. As he writes, the EUSS “has profound weaknesses [...] it introduces a constitutive application system, which implies that all those who do not apply by the deadline will become illegal overnight, and lose immediately all residence rights and entitlements” (Smismans, 2019, p. 2). The idea here is that a deadline is part of the EUSS as a legal framework that intentionally creates a cliff edge that eligible individuals could fall off

¹¹ This was also something mentioned by many civil society interviewees, who stressed that while the scheme is harmful right now, it will also need to be used for many years to come, meaning that its impacts will play out over a much longer timescale than can be captured in this study or many others.

(Jabłonowski, 2020). Furthermore, legal scholars have argued that the fact that there are documentary requirements for such an application means that some potential applicants will struggle substantially to make an application (Alexander, 2020). The NGO AlgorithmWatch (2020), in their report on the EUSS, writes that the automation of the EUSS application process poses risks to applicants due to poor-quality decisions, especially in the cases of people who do not have extensive records with the DWP or HMRC.

In addition, criticisms have been made, and research has been conducted about the EUSS application procedure, including that it is too technically and administratively onerous for many people to pass through successfully (Booth, 2019; UK in a Changing Europe, 2021). There are three elements to this. First, there is the automation of the application process mentioned in Ch.1. As Tomlinson argues, the EUSS is part of the broader automation of the British immigration system and the paring back of the use of human decision-makers and their interaction with immigration status applicants to cut costs (Tomlinson, 2019b). The impacts of this have been criticized as potentially disastrous for certain groups of people.

Second, critics identify that the EUSS actually has “a double application process with multiple individual deadlines [which] inevitably increases the complexity of the scheme and the risk that some people fail to understand the differences between the two statuses, including the need to reapply if they hold pre-settled status” (Fernández-Reino and Sumption, 2022, p. 1). The legal distinction between Settled and Pre-Settled Status has been the subject of ongoing contention, arguing that the EUSS creates more cliff edges than necessary, leaving people vulnerable to falling off if they are not attentive to the requirements of the status. For instance, under the initial setup of the project, if someone simply forgot to apply for Settled Status by the time their Pre-Settled Status expired (it expired after five years), then that person would be living in the UK illegally (Citizens Advice, 2021). Fernández-Reino and Sumption (2022, p. 1) further identify that there is:

a more onerous application process for settled than for pre-settled status. When automated checks are not accurate or not available, applicants must provide their own evidence of five years of continuous residence in the UK. This is more difficult than providing a single piece of evidence that could be used to obtain pre-settled status in an initial application. Providing evidence is more difficult for some groups who do not engage regularly with public bodies, e.g. homeless people, workers in informal employment, or some non-working women caring for children.

This further identifies that not only does having two immigration statuses in the EUSS mean there are too many opportunities for someone to lose their status, but there is an additional onus on the status holder to prove to the government that they have the right to stay in the UK.

Third, there are concerns about eligibility for the scheme. As Smismans (2019) has noted, there are concerns that requiring EUSS applicants to file an application for a new status in the UK – as opposed to alternatives like requiring people to declare their residence – provides an administrative burden that some number of individuals will not be able to overcome.¹² The requirement to provide formal evidence of

¹² Note that the distinction between a declaratory and constitutive system discussed by Smismans is rather complex. HM Government (2020, p. 4-5), in their “Explainer for part two (citizens’ rights) of the agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union”, defines it as follows: “In a

residence prevents individuals who lived without paperwork – e.g., non-working spouses, students, individuals working under the table or informally, homeless people, victims of human trafficking, etc. – from evidencing their eligibility for the scheme. Furthermore, this requirement favors people who are already visible to government agencies. Eligibility for Pre-Settled to Settled Status applications also required one to be in the country without substantial absences. As Fernández-Reino and Sumption (2022, p. 1) write, “the duration of absences allowed has been a source of confusion for many pre-settle status holders. Residents with pre-settled status can lose their path to settlement—that is, their ability to secure settled status in the future—if they spend more than 6 months abroad every 12-month period (with some exceptions). Seasonal workers and other circular migrants with pre-settled status will be at greater risk of not qualifying for Settled Status. Prison sentences will also break periods of continuous residence regardless of the duration of the sentence.” Eligibility for the EUSS was one area in which writers understood COVID-19 to have a substantial impact since it trapped many people outside the UK at risk of breaking their continuity of residence (Benn, 2021).

1.1.2 Criticisms of the Digital Status

One of the most vocal criticisms of the EUSS, especially by the3million and the Public Law Project, has been of its so-called digital status (see Ch.1). While online right-to-work (RtW) checking services like those used for the EUSS have been lauded as effective and a solution to the security and fraud problems by the Home Office and contractors, critics have argued that “An entirely digital scheme (i.e. digital application and digital proof of status) is convenient for many applicants, but makes it harder for some to understand their current status and the need to reapply to the EUSS” (Fernández-Reino and Sumption, 2022, p. 1).

Critiques of the EUSS have further identified that the EUSS has been beset with a vast array of IT problems, including data breaches and errors. Researchers have identified a range of technical errors that plague the EUSS application and the View & Prove Your Immigration Status (V&P) system. The3million has distilled some of these concerns in the following infographics:

declaratory residence system, a residence status is given directly to those in scope of the Withdrawal Agreement by operation of the law and is not dependent upon completing administrative procedures. A 4 See paragraph 8 5 Data correct as of September 2020 5 decision by the host state is not required to have status under the Withdrawal Agreement. However, those eligible for status have the right to receive a residence document confirming this and there may be an obligation under national law to register for a residence document, which evidences the status.6 b. In a constitutive residence system, those in scope of the Withdrawal Agreement only gain a residence status if they submit an application for a new residence status and the application is granted. A decision by the host state is required in order to have status under the Withdrawal Agreement. Failure to apply by the deadline for applications will mean individuals’ residence rights are not protected by the Withdrawal Agreement.”

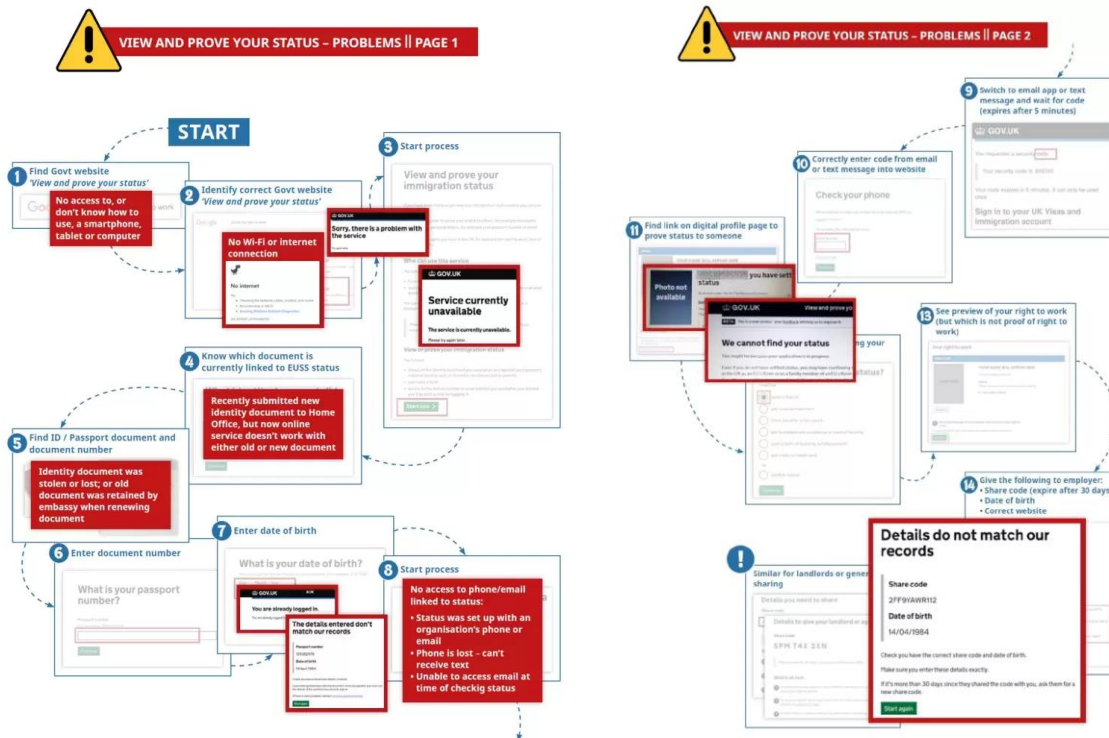


Figure 6. View and Prove Problems: The3million (2023).

These errors, which occur at every stage of interaction with the EUSS, including applications, proving status, and maintaining status (e.g., updating documents and changing names), are largely attributed either to flaws in the design of the EUSS, to the speed of development of the system, or to a lack of anticipation of the number of people who would sign onto it. There was also criticism that the design of the EUSS – having large parts of it online – would also inevitably lead to technical errors since complex IT systems typically produce some amount of error and should have redundancy built in. Evidence presented to Parliament confirms a small amount of the scope of these errors:

The Committee asks for the Home Secretary's assessment of the EUSS database error in January 2023, which led to an incorrect application status being displayed online for approximately 146,000 people for an extended period of time. The Committee expresses deep concern to hear some people may need to make repayments for benefits or pay for healthcare services that they received retrospectively and requests clarity on this matter (UK Parliament, 2023, p. 1).

However, despite some inquiries, there has been difficulty quantifying the extent to which the EUSS produces errors. Some authors have also found that the EUSS and the legal statuses it provides are so insecure in the perceptions of users that they lead them to apply for British citizenship. Barnard et al. (2022, p. 382) find that “many people intend to apply for British citizenship in order to cement their security of status in the UK, feeling that the new settled status option does not provide enough security.”

Researchers have interviewed EU migrants to show how they have navigated the Scheme and how it has negatively impacted their lives (Stalford and Humphreys, 2020). This has led them to argue (I think very

convincingly) that the EUSS places undue stress on EU citizens, leaving them without a stable immigration status and occasionally preventing them from accessing social services. Barnard, Butlin, and Costello (2022) have found in their study of EU nationals in the UK after Brexit that a significant share feels unsettled by the Brexit process and stress the need of this population to maintain their status - updating documents and ensuring they are continually able to access it -, and attribute this need to the digital method for storing records.

Similarly, scholars have launched their criticisms as an extension of the field of public law, seeking to tack empirical technology criticism onto otherwise paper-based legal scholarship (Tomlinson, 2022; Welsh and Tomlinson, 2019). Joe Tomlinson's work has argued that the EUSS is discriminatory - in a legal sense - because of the excess burden it places on certain categories of individuals. Tomlinson shows how certain profiles of individuals, such as those with poor IT skills, will be poorly suited to navigate the EUSS. Others have conducted statistical research to identify the prevalence of such types of people. Some of the most comprehensive writing on discrimination in the EUSS has emerged from the Oxford Migration Observatory, in which authors have posited the existence of characteristics of vulnerable applicants and measured the share of the UK-resident EU population likely to have these traits. Methodologically, this is done by reviewing existing reports, especially from civil society groups, and conducting interviews with people working in such groups, then examining publicly available datasets (Sumption, 2020; Sumption and Fernández-Reino, 2020).

Jablonowski and Pinkowska have created a typology of why a person might be vulnerable to negative impacts from the EUSS. In their so-called "principles-based" approach, highlighting features of individuals at odds with the design of the EUSS, they aim to show "that vulnerability is baked into the legal framework and technical design of the EUSS, as the Scheme does not sufficiently account for the diversity of applicants' needs and circumstances" (2021, p. 10). Such an approach shows how people are made vulnerable by concrete choices made in the development of the EUSS' policy and IT. Instead, Sumption, Tomlinson, and Jablonowski take the view that the Home Office and its contractors pass static design - identifiable by their methodology of reading policy documents - down upon passive users who receive it based on static "demographic and vulnerability characteristics" (Jablonowski and Pinkowska, 2021 p. 9). The EUSS is seen (I think correctly) in existing literature as a poorly or maliciously designed system that ought to be redesigned in order to protect the rights of its users.

Throughout the thesis, I will argue that this view can be complemented by looking to STS and IS theories and research about how people use IT systems, which tends to highlight people's employment of intermediaries and workarounds and a high degree of agency with respect to resisting or adapting to design and that design is not a static state handed down by designers; something Stewart and Williams (2005, p. 4) refer to as 'the design fallacy.'

1.1.3 Information and Preparedness of Human Staff

In this section, I look at the information and support provided by human staff working on the EUSS. There are also criticisms related to how the scheme has been put into place and operated by the government. This includes the training of staff and the provision of information to applicants and status holders. Authors express concerns that "the EUSS is being administered online as a fast-track process by staff who are not fully qualified, regulated nationality law experts" (Stalford and Humphreys, 2020, p. 9). This is said to lead to poor quality decisions, with researchers arguing that high numbers of successful

administrative reviews indicate a deplorable quality of decisions by caseworkers (Welsh and Tomlinson, 2019; Welsh and Jablonowski, 2022). In addition to the risk of deportation for rejected applicants, this is particularly concerning given the double-barreled application system discussed above, where Pre-Settled Status recipients were placed into a far more precarious position than Settled Status recipients.

In addition to poor-quality decisions, there are also worries about the levels of support that are available for applicants to the scheme. As Fernández-Reino and Sumption (2022, p. 1) write, there has been a notable paucity of effective information and support offered by the government to people applying for and struggling to use the EUSS, something not only important during the early stages of the project, but throughout its lifespan:

Uncertainty about the level of support that will be available in the future, including interpretation and translation services. The availability of face-to-face assistance will continue to be relevant for some applicants for several years to come, but at the time of writing this report, financial help to support vulnerable applicants (via organizations with Home Office grants) is expected to end by the end of March 2022. Caseworkers in contact with EUSS applicants also identified language barriers and limited interpretation and translation services as one of the main challenges in their work.

Research acknowledges the difficult task of providing adequate support to a group as diverse as that of the potential applicant base of the EUSS but that this task has not been met, with inadequate support from the helpline. This concern extended to the provision of basic information about the scheme, with inadequate and confusing information on Gov.uk, which was not available in the full range of EU languages. As mentioned above, authors express concern about the potential consequences resulting from ineffective information provision, as people might miss the deadline as a result (the3million, 2021, p. 6).

1.2 Vulnerable Groups and Discrimination

In this section, I review accounts of the EUSS that have described it as discriminatory or as having differential impacts on some groups of people. Scholars at the Public Law Project (PLP) have produced extensive research on the EUSS, in particular concerning themselves with “digital discrimination and, in turn, the question of whether the law could be called upon to prohibit digital-only documentation and perhaps even mandate paper-based alternatives—something which is already beginning to occur” (Tomlinson and Welsh, 2020, p. 4). By documenting the technical minutia of the scheme and its impacts on different groups (such as domestic abuse victims, the elderly, and Roma), these scholars show that the scheme disadvantages its recipients over people with, for instance, permanent residence cards, BRPs, and UK citizenship. A similar project is taken up by other academics and in a range of third-sector reports, which provide most of the evidence that currently exists about how the EUSS impacts its users. This section provides a brief account of this literature.

Some of the most comprehensive writing on discrimination in the EUSS has emerged from the Oxford Migration Observatory, in which authors have asserted (based on conversations with experts in civil society) the existence of characteristics of vulnerable applicants and measured the share of the UK-resident EU-citizen population likely to have these traits. Methodologically, this is done by reviewing existing reports, especially from civil society groups, and conducting interviews with people working in

such groups, then analyzing publicly available datasets (Sumption, 2020; Sumption and Fernández-Reino, 2020). In this approach, people are understood to be vulnerable to adverse impacts of the EUSS because of their falling into a variety of categories based on their traits. Similarly, Radziwinowiczówna (2020, p. 1) creates a list of types of people, including people with criminal records, homeless people, people without biometric IDs, non-working family members, and people without access to technology, who will likely face a variety of issues making applications under the EUSS.

Tomlinson et al. (2022, p. 319) also focus on a list of people with certain characteristics, namely “disabled people, older people, and Gypsy, Roma and Traveller people”, whom they explore theoretically will experience a poorer experience with the EUSS than other groups. Tomlinson et al. employ a methodology of mapping out the design of the Scheme and asserting a theoretical connection between certain elements and certain features of applicants and status holders. Similarly, Booth (2019) emphasizes this connection between design choices and adverse outcomes for certain groups: “From the outset, it has been predictable that certain groups – often vulnerable individuals would be less likely to have, or may struggle to access, documentation from these two sources. It is therefore likely that a significant number of applicants will not find the process ‘short, simple [and] user friendly’” (Booth, 2019, p. 2).

Many of the authors writing and doing research on this topic are civil society workers reporting on the needs of their own communities. For instance, Roma-Sinti activists and other individuals involved in or associated with this group have produced extensive empirical and policy literature on this topic. For instance, Godin and Bica write about Roma in the pilot studies that:

In total, only 2 people (less than 3%) could submit an application without the assistance of a caseworker. Despite providing users with some guidance about the documents they should bring over to prove their continuous residence in the UK for the last 5 years, many were unable to identify which piece of paper was the most relevant one being limited to only 10 documents to upload by the application. As a result, people came with piles of papers, including council tax bills, GP appointments, and bank account statements, with no idea about which one to choose. The overall process was therefore extremely time-consuming with two hours on average spent per application while some took up to 4 hours and over several sessions (Godin and Bica, 2019, p. 2).

They argue that Roma were particularly disadvantaged by the need to apply and produce evidence for UK residency. Furthermore, Doležalová et al. (2021, p. 3), summarize a range of reasons why Roman women, in particular, are disadvantaged by the design of the EUSS, writing that

Roma women with small children, or older people who are less likely to be in employment, are more at risk. For many couples, all bills and bank accounts are in the man’s name. This makes women less likely to be given a settled status and organisations supported Roma women to demonstrate their presence in the UK through GP and school letters. Further issues can arise when the male partner, who had been in employment and whose name was on all official documentation, passes away. The organisations told us of cases where bereaved women needed extensive support to prove their residence.

Doležalová et al. (2021) further seek to demonstrate that digital divide issues are particularly prominent among Roma, and the digital approach to the Scheme (alongside the deadline as argued by others) is particularly to blame for adverse outcomes.

Children and victims of domestic abuse are also discussed in these reports, in particular by organizations like CORAM. These individuals are seen as vulnerable for various reasons, including digital divide issues and their inability to provide evidence of their residence in the UK (CORAM, 2019, p. 14-15). In addition to this work focused on specific communities, Alexander argues that a holistic view might be taken to identify the range of ways in which a person is vulnerable to negative impacts from the EUSS. Such a view is that different characteristics of individual applicants and status holders – predictable by the forms of oppression identified by critical scholars of race, gender, and social class (Benjamin, 2016) – will together lead to individuals facing adverse outcomes from the Scheme. In response to this concern, Alexander (2020, p. 3) calls for “the government to look more holistically, and to consider the multiple forms of discrimination which people are subjected to” and how applicants' problems can intersect with a range of characteristics, including “gender-based violence, poverty, homelessness, and disability.”

This research is also reflected in EU and UK law and practice and openly acknowledged by the Home Office, which has acknowledged the existence of vulnerable groups and even provided funding for organizations to support their applications to the EUSS (Home Office, 2019). They list a range of types of people who might have reasonable grounds for missing the deadline, including being a child, having a medical condition, having care or support needs, being a victim of modern slavery, being a victim of an abusive relationship, lack of access to the internet or to documents, documents, eligibility changes, indefinite leave, expired residence documents, and difficulties caused by COVID-19 restrictions (Home Office, n.d.).

Finally, I want to offer an evaluation of this literature. The wedding of these two strains of migration studies and legal literature is somewhat reactionary – although my use of this word should not be read as a criticism – in the sense that it emerges in the wake of Brexit and seeks to identify and publicize problematic aspects of the EUSS which can be the subject of lawsuits. Such an approach has similarities with a strain of critical STS and sociological literature, which seeks to problematize the design of new technologies (Wajcman, 2002). In place of mere academic concern with the scheme's most problematic aspects, these scholars are interested in what about the EUSS is legally discriminatory or in violation of the Withdrawal Agreement. In some cases, they are concerned with the discriminatory impacts of certain design choices, showing how these make the EUSS violate the Equalities Act. This literature thus offers a critical account of the EUSS that identifies the harms created by the EUSS' specific design, particularly upon vulnerable groups. This is, however, understandable given that the goal of disciplines such as public law is to understand the conflict of policies, law, and design choices with constitutional law. The thesis attempts to add a new perspective to this literature, one from STS and IS, which I hope can contribute to this conversation about the concerns that arise from the EUSS and projects like it. An overview of this perspective can be found in Sec.3.

2. The Context of Existing EUSS Research: A Review of Some Key Concepts in Critical Security Studies

This section shows how the kind of technology criticism discussed above has played out in the dominant conversations within sociological and political science literature on security and migration – namely critical security studies’ work on social sorting and digital border control. While the literature above is practical and empirically rich, an academic might wish to build on a set of theoretical concepts and interests in researching the EUSS (especially within a doctoral thesis). This section examines one of the dominant fields of research within work on border control technologies. While this is a separate literature from the design criticism discussed above, I argue that this criticism can be understood in relation to the work of these scholars who focus primarily on policy and the state because of their shared concern with injustice and mal-intended design within border control technology. I specifically focus on a set of concepts within critical security studies. In this section, I review this literature, focusing on several key concepts that define social science approaches to migration control, namely social sorting and the digitization of borders. While these concepts are the dominant perspective in studies of border control and can help contextualize the approaches taken by policy scholars to the EUSS, at the end, I review some of the limitations of this literature, showing why I did not rely on this approach in my study of the EUSS. In Sec.3, I discuss an alternative approach within STS to migration control, population classification which is relied upon in the study.

Existing literature on border control is largely, even to this day, despite frequent criticism (see Mitchell, 1991), statist.¹³ By this, I am referring to a tendency in the literature to treat the state as the primary actor in explaining the implementation of border control IT (Koinova, 2017). As Jessop writes, statist tend to hold that “there are distinctive political pressures and processes that shape the state’s form and functions; that give it a real and important autonomy when faced with pressures and forces emerging from the wider society; and that thereby give it a unique and irreplaceable centrality both in national life and the international order. In short, the state is a force in its own right and does not just serve the economy or civil society” (Jessop, 2001, p. 53). For migration and border security researchers, migration control technologies are understood to be part of the state’s efforts to restrict and control population movement. As Huysmans (2006, p. 30) writes,

migration is intimately intertwined with the spectre of the sovereign state. Thinking about migration and refugees has become a way of thinking about the state and thinking in state categories. Today in Western Europe both immigration and refuge are primarily seen as movement of people between states – rather than movement between rural and urban areas, for example. Cross-border movement and the presence of aliens is bound to evoke questions of political loyalties, calculations of the impact on the economic, military and other capacity of the state, issues of controlling penetration of the national territory, etc.

¹³ A brief note: This literature and my use of the term statism should be distinguished from statism in the normative sense of political philosophy, which holds that states ought to have the right to independently set their own border and migration policies, not merely that they do in practice (Mathis, 2018). The migration control literature, seeing the state as central to migration control, is typically very critical of it.

Huysmans' (2006, p. 31) own approach to the role of the state in migration control focuses on “how a multitude of practices and phenomena modulate certain techniques of government and are modulated by them. They produce the state both as their domain and principle of application.” Huysmans sees the state as both concerned with knowledge (of populations in this case) and a set of practices by which knowledge is applied to control populations. The state is a significant part of how this literature explains the development and deployment of migration control technologies, being the set of agencies that deploy and develop these technologies (Kalir et al., 2019, p. 6).

Broadly, two bodies of argumentation within this critical security and migration literature inform directly or are otherwise relevant to research on the EUSS: 1) social sorting and 2) the digitalization of border and migration management to cement categories people are placed into. Researchers working with these themes also tend to be pessimistic about these technologies – i.e., the ethics behind their motivations and the kinds of impacts they have – which is something further reflected in research on the EUSS.

The literature tends to be methodologically focused on how states control migration, typically drawing on policy documents and interviews with policymakers as evidence. While it has the strength of having rigorously documented migration control at a written policy level, I argue that it has the weaknesses of being insufficiently empirical in the sense that it takes for granted the kinds of actors involved in migration control and the kinds of effects they have. This can obscure the extent to which migration control IT can be flexible in its use.

The section below is concerned with how social sorting works in general; authors writing in this area are often vague about technology. Additionally, some scholars writing about social sorting, especially those cited in Sec.2.1, did their work before the application of contemporary digital technologies to migration control. Efforts have been made in recent years to clarify the way social sorting operates through technology, in particular IT, and these are reviewed in Sec.2.2.

2.1 Social Sorting

In this section, I look at the concept of social sorting advanced by researchers studying migration control. IAM systems, such as the EUSS, are involved in implementing legal categories of people through a process commonly referred to as social sorting. As Lyon, one of the scholars credited with having developed and introduced the term in social science, writes: “The ‘surveillance’ dimensions of (inter)national security arrangements have everything to do with ‘social sorting.’ That is, they are coded to categorize personal data such that people thus classified may be treated differently. People from suspect countries of origin or with suspect ethnicities can expect different treatment from others” (Lyon, 2007, p. 162). Such categories include citizen, immigrant, illegal immigrant, legal immigrant, refugee, legitimate traveler, and stateless person.

The section starts by reviewing how scholars have documented the creation of legal identities. Next, I review how this literature has taken a statist interpretation of social sorting and how they have argued that a global hierarchy of citizenship has been created and enforced through technology. The work of STS scholars on sorting and classification, for instance, Susan Leigh Star, is introduced in Sec.3 in my discussion of STS research on border control.

The literature on passports and border controls largely springs out of attempts to understand the changes happening at the end of the Second World War and the Cold War and the imposition of stark border controls between states in their wakes (Torpey, 2000; Caplan and Torpey, 2002) and also from the sharp politicization of border control in the wake of the so-called refugee crisis of 2015. The changes in the attitude towards illegal immigrants over time indicate a social reclassification of illegal immigrants. As Engbersen and Van der Leun (2001, p. 55) write, “Whereas they were once welcome as ‘spontaneous guest labourers’ and later on were silently tolerated as the ‘necessary workforce’ for certain economic sectors, they were now excluded as undesired ‘illegal immigrants’” Slaven (2022) further identifies the increasing focus on immigration control with another trend, especially in the UK, that of emphasizing individual controls and documentary requirements of individuals as a core of migration control since the 1970s.

To understand the increasing focus on migrant classification, critical migration, and security scholars identify how such categories are first created in law and policy before being implemented through border control practices and technologies. As Basaran writes, “Law’s most powerful tools are also its most ordinary tools: the creation of legal identities, the creation of legal spaces and of legal borders, and the definition of the scope of legal rights” (Basaran, 2008, p. 341). Law is the first step in the sorting of populations into different categories who are to be afforded different rights. Scholars have documented how countries differentiate between citizens and migrants and between different categories of citizens; for examples of the former, one notes the work of scholars on illegalization (De Genova, 2002; De Genova and Roy, 2020), and for the latter, the treatment of Roma in Romania (Plájás, 2021) and the division of citizens of the British empire into different categories. This latter has been analyzed as part of the history of migration control leading up to Brexit and the EUSS – I focus on this discussion of social sorting in British migration control in particular because of its relevance to the EUSS (not because of a lack of literature on other national contexts).

Within migration and security research, there is a prominent statist interpretation of migration control and social sorting, which explains migration control technologies, such as passports, visas, and databases, primarily with reference to the functions of the modern state (Van Puymbroeck, 2016). As Castles (2005) writes, our present (post-WW2) world is one of nation-states - reflecting the decline of the pre-WWI era in which movement between national territories was largely (although not without exception) tolerated and unregulated. One’s privilege to move between nation-states is determined by one’s citizenship, and governments began passing laws in the 20th Century requiring passports and visas for entry (Castles, 2005). As Torpey (2000, p. 8) writes, “States have sought to monopolize the capacity to authorize the movements of persons – and unambiguously to establish their identities in order to enforce this authority.”

Castles (2005) outlines a global hierarchy of citizenships into which one can fall, with American and wealthy European citizenships at the top of the hierarchy (what Glouftsiou (2021, p. 46) calls “kinetic elites”) all the way down to citizens of so-called failed states and stateless persons at the bottom of the hierarchy. The result of social sorting is argued by scholars to be the creation of a modern world in which one sees a hierarchy of citizenships, nations, and group memberships reinforced by ever-stricter policies and ever-more advanced techniques of control. As the social theorist Zygmunt Bauman writes, “Behind the colourful curtain of free competition and equal trade, homo hierarchicus lingers [...] In the world of

global freedom and equality, lands and population have been arranged in a hierarchy of castes” (Bauman, 2013, p. 59). With a poor position in the global hierarchy of citizenships or without access to documentation, one is effectively rendered immobile, unable to leave the borders of one’s country.

The function of migration control technologies, security scholars argue¹⁴, is to create and enforce restrictions of mobility based on one’s position in this hierarchy of citizenships and status, making border checks smooth and fast to ease the inconvenience they create for elites while making them as hard, impenetrable and numerous as possible for everyone else (Glouftsiou, 2021, p. 46). Border control technologies, as Huysmans (2006, p. 13) writes, are embedded in security discourse and wrapped up in security-driven policies that shape their application. Such a view of border security has been widely shared by other migration and security scholars, including Bigo, De Genova, Basaran, and a range of others.

2.2 The Digitalization of Borders

In this section, I look at scholars and researchers who have traced how information technologies have become utilized in border control, with reference to the ongoing development of UK border control technologies. There are three broad strains of argumentation on digital borders within political science and sociological literature. Scholars point to how digital technologies reinforce and make more effective state capacity for migration control (see the previous section) in the way of 1) improving the ability to predict and track migration, 2) improving states’ ability to distinguish between different kinds of individuals (i.e., socially sort people) and have meaningful impacts on the content of this process, and 3) improve state collaboration in migration control through interoperable databases. These are accomplished through the use of digital databases that allow real-time access to data by frontline border guards, police, and devolved controllers (e.g., employers) and can be used to make decisions about risk and entitlement. This has been described variously as the digital border (Chouliaraki and Georgiou, 2022), signaling a focus on how digital technologies are implicated in the continued processes of border control mentioned in the previous section.

These lines of argument are described in Sec.2.2.1 and 2.2.2. While these contributions from migration and security studies provide useful insights into the use of digital technology in migration control, I will argue they fail to understand the implementation and development of border control technologies on the ground and the ways in which this differs from policymakers’ stated goals of controlling migration. Promising responses to this literature by researchers working at the intersection of STS and IS and critical border and migration studies who seek to overcome this limitation are presented in Sec.3.

IT systems, such as registers, biometric capture and storage, IAM systems, and statistical models of individual risk, are understood as enforcing security policies and laws related to migration and nationality (Huysmans, 2006) and generally assumed to be effective in doing so. Scholars variously argue that these technologies are part of: states’ monopolization of people’s movements and their attempt to grasp and make legible populations (Torpey, 2000; Pelizza, 2021), the metabolism of the state, which seeks to

¹⁴ STS researchers’ discussions of this will be covered in Sec.3. This perspective is the theoretical perspective I’m adopting for the thesis.

constantly expand the amount of information it consumes and the number of people subject to its control (Boyce, 2015), attempts to render more and more problems questions of security (Bigo, 2008, 2014), and attempts to neatly sort populations into different categories based on the level of privilege they are afforded and the level of threat they are thought to pose (Lyon, 2000). What these arguments have in common, among other things, is a reading of border control technologies as instruments of state power. Some scholars will emphasize the role of other actors in influencing policy, such as private security actors (Gammeltoft-Hansen and Nyberg Sorensen, 2013; Bigo, 2014), but the emphasis remains on how IT is an instrument of various kinds of state power.

2.2.1 Prediction and Automated Decision-Making

In this section, I review scholarship examining automation and prediction in border control settings. There is an emerging literature on how new digital technologies can be used to proactively sort migrants into risk categories and how much of contemporary border control has been focused on prevention and prediction rather than control at the point of entry from one country to another. This scholarship is widely relevant to the EUSS, considering the project's reliance on automated decision-making.

Bigo (2014) finds in his research on EU border control that the function of many border guards has shifted to a bureaucratic one, processing data from different sources and preventing suspected threats before they arrive at the border. As he writes, border control technologies are intended to work “not through stopping individuals, but through forms of ‘legitimate’ suspicion, pre-control of departure, and during travel in terms of prevention and blockades of dangerous routes – for the protection of migrants themselves” (Bigo, 2014, p. 217). This literature has emerged in response to the growing interest among governments in the promise of artificial intelligence (AI) to realize security policies and concerns among critical scholars about the risks they pose to human rights. Beduschi (2021) identifies that artificial intelligence (AI) might be used to predict migration flows and better prepare for them – both positively in the sense of developing support capacity for refugees and negatively in the sense of pushbacks. Bigo (2014, p. 218) further elaborates on this point, writing about his interviews with border guards: “These analysts hold that they can anticipate actions via data-profiling and prevent dangers via data-ban.” Van Den Meerssche (2022, p. 199) expresses concerns about the growing application of AI in this sphere and argues that these technologies will be used to sort people based on new and opaque categories.

This worry about prediction has been drawn into the discussion of the EUSS explored above. As I described in 1.1.2, concerns about risk scores and automated decision-making have been discussed by scholars and researchers concerned with the application system. A report by AlgorithmWatch (2020) cites concerns of people being granted Pre-Settled status rather than Settled Status because the automated system failed to find records of them. Similarly, Booth (2019) has explored how the use of automated checks will lead to certain groups not being granted status or having to provide excessive documentation, citing the ways automation can lead to discrimination and calling on the government to be more transparent about their design of the system. The increasing use of predictive algorithms in border control is salient in the EUSS case because the scheme has been such a public and controversial trial of this technology in the context of Brexit.

2.2.2 Digital Social Sorting

In this section, I look at how digital techniques are also implicated in the process of social sorting discussed above. As Maxwell and Tomlinson (2022, p. 2) document, the UK Home Office has been one

of the most prolific purchasers of IT in the government. They have used, for instance, automated decision-making for the processing of visitor and student visas (scrapped in 2020 due to alleged human rights violations), for identifying sham marriages, and for the EUSS.

In one sense, digital technologies make social sorting more effective. Webber argues that the function of biometrics and other IAM technologies is to more effectively realize unjust global hierarchies. As she writes, “For the global elite, it has never been easier to move about the globe, as biometric technology opens gates literally at the blink of an eye, and new immigration rules smooth the path of the wealthy, even as fees have increased steeply to reflect the commercial value of UK residence” (Webber, 2012, 4-5). Essentially, Webber’s argument encompasses both digital divide issues and issues related to the hierarchy of passports discussed above. She identifies how a core result and motivation of biometric technologies has been social exclusion.

Basaran further and more concretely examines how these legal forms of social sorting have been put into practice using information technology. Studying citizenship, passports, visas, and biometrics is a core way in which scholars understand the exclusionary practices of the modern state – since the exclusion of certain people requires a robust system of identification for the whole population (Basaran, 2008). This idea is variously put into practice in research on Europe’s external borders and how they are created to differentiate inside from outside (Follis, 2012), categorize entrants (Pelizza, 2021) and control their journeys through Europe, and sort people based on risk scores (de Goede and Sullivan, 2015; Van Den Meerssche, 2022). More than simply better, however, digital technologies for socially sorting populations are understood to be different in how they work. They are predictive and individual and rely on more information than paper-based techniques.

These processes associated with the collection of personal and biometric data as a form of geographical containment speak to the ‘internalisation’ of borders in which the increasing focus on the human body as a definitive form of identification means we carry the border with us wherever we go and cannot escape it. Personal data becomes an individual’s means of crossing borders and receiving vital aid whilst navigating asylum procedures and surviving in refugee camps and hotspots (Metcalf and Dencik, 2019, p. 1).

There is also literature focusing on the distinctive aspects of digital vs non-digital migration control. There are three areas that are often discussed in this regard: First, there are the ways in which searchable interoperable databases allow greater internal and cross-national coordination since this makes surveillance easier (Ajana, 2013). Second, there are ways in which data collection and predictive modeling allow the classification of people based on ever-more-individual risk scores (Van Den Merschee, 2022).

2.3 The Gap Hypothesis and Public Policy Implementation

While the thesis focuses on contributing to the STS conversation about border control, this section is written to acknowledge that political scientists are aware of the limitations of the statist control-focused literature. These ideas in security studies about the bordering of the contemporary world have not gone without more nuanced investigation. In this section, I very briefly look at responses to this literature within political science, showing how, rather than focusing just on control, political scientists have also

looked at the limits of control and the implementation of border control IT. In this section, I look at how security and immigration scholars' accounts of migration control technologies have been critiqued by a range of scholars who suggest there might be preferable ways of explaining the development and impacts of these technologies. In particular, I look at work on the gap hypothesis or the idea that public sentiment and public statements related to migration control have become more restrictive, but migration policies have not (Lutz, 2021). This body of scholarship provides a response to some of the perceived limitations of securitization scholars and is an approach to the study of migration control technology that makes clear that actors in state institutions need to contend with a wide array of countervailing incentives and actors. These include other government-level actors, including legislators, ground-level bureaucrats, and migrants themselves. The section explores how implementation has been conceptualized and studied in political science, focusing on responses to the gap hypothesis. This section does not attempt to provide a full overview of this literature since the goal is merely to set up some of the critiques that have been launched against the literature discussed above, showing the diversity in this body of scholarship.

A range of scholars have looked at how officials with the goal of controlling migration are constrained by politics and are not autonomous from it (Neal, 2012a; 2012b). This is especially true in liberal democracies, in which restrictionist immigration policies are (to varying degrees) constrained by executives who may not always see it in their interest to impose heavy restrictions on migrants, both due to the possibility of negative public responses, legal concerns, international relations, economic incentives. The literature on economic constraint highlights how economic incentives may influence decisions regarding the admission of migrants (Freeman, 1995). Work on the role of legislatures in migration control has shown that constraints within the political system (from street-level bureaucrats, constitutional courts, and so forth) often prevent states from fully exercising their monopoly over the means of movement (Walsh, 2017).¹⁵

Relatedly, scholars have also noted that there are legal constraints faced by state officials through domestic courts and international legal norms that can constrain officials. Castles (2006), in his discussion of the German guestworker program, argues that the program failed largely because it was impossible for the German government to simply deport guest workers without giving them the opportunity to apply for further work permits, student visas, citizenship, and so forth, foiling the government's plan to prevent long-term migration resulting from the program (see also the work of Joppke (1998) for a discussion of legal constraint in migration control). Similarly, authors like Bauböck (2000) and Soysal (2012) examine the limitations of states to control migration due to international legal constraints. Authors have also, in turn, examined countervailing economic incentives to migration control, showing how these serve to influence the actual efforts to control migration (Hollifield et al., 2008).

In addition to the work of scholars highlighting the role of judicial constraint in migration control, there is also a body of scholarship identifying fragmentation and poor performance and coordination within state border control agencies. This answer to the gap hypothesis is to look at the difficulties of implementation. Recent writings on the UK Home Office and UK Border Force (UKBF) highlight as much (McKinney, 2022), showing that UKBF has UKBF itself is a successor to the failed UKBA. There is also the seminal work of scholars like Antje Ellermann (2009) and Kitty Calavita (2010), who express a growing

¹⁵ For background on this term see earlier in this section and Torpey (2000).

skepticism of the capacity and willingness of the state to exercise violence (the hallmark of a state understood in Weberian terms) in the realm of immigration.¹⁶

The liberal constraint literature further identifies that migration control is often symbolic, as governments respond to conflicting goals and incentives by decoupling rhetoric and practice. Boswell (2009) documents this in the case of British immigration policy, showing how the focus has been on public-facing displays of enforcement, such as raids and migration statistics, with the goal of gaining and maintaining legitimacy in the eyes of the public rather than on enforcement. Badenhoop (2020) further documents that the appeal of EU migration control databases such as the EURODAC and SIS II is based on the public appeal of these databases rather than their effectiveness. New technology and draconian migration control, in these accounts, are less about actual control of migration than appeals to the public about government's ability to do so.

Furthermore, there is a risk when it comes to actually implementing coercive migration control policies. First, when a policy is implemented and its impacts on individuals are visible, anti-regulatory interests (migrant advocacy groups, civil rights groups, etc.) can frequently mobilize and launch charges against the policy. As Ellerman (2010, p. 31) writes:

Whereas at the legislative stage, proregulatory interests typically mobilize the public around the benefits of social regulation, at the stage of implementation, it is antiregulatory interests that instead dominate political debate by drawing attention to regulation's costs. This shift in public attention from policy benefits to costs, then, puts antiregulatory interests in a strong position during the implementation phase and can pose a formidable challenge to state actors charged with the enforcement of such policies.

One might explain some of the success of opposition to the EUSS in this manner, especially the court case invalidating Pre-Settled Status, to the public visibility of the cost of allowing status holders to lose their right to live in the country.

Second, authors within this literature show that ground-level bureaucrats to have discretion over the implementation of a policy, and there is often little that states can do to fully constrain local variation. In their study of Dutch street-level bureaucrats, Belabas and Gerrits (2017) documented deviation from official practices (for instance, prompting clients for information that would lead to favorable decisions or Ellermann (2006) explores the case of German border officials who are oftentimes unwilling to conduct deportations due to concerns of public backlash, thereby deviating from official policy. For Ellermann, in response to public pressure, there has been a shift in state function to coercive social regulation, which she defines as “policies that regulate individual (rather than firm) behavior in highly intrusive ways and, in the process, impose severe personal costs on the regulated” (Ellermann, 2010, p. 3). However, what makes Ellerman's work distinctive, and contrasts it with the work of scholars like Wacquant and De Genova, is that she examines the day-to-day process of implementing migration controls. This leads to a

¹⁶ This is not to say the state does not exercise control over migration or use coercive measures against migrants, but that there are limits on both capacity and motivation identified by the scholarship reviewed in this section.

softer, more empirically rigorous, and less deterministic view of state power. She finds that there is significant room for interpretation, resistance, and contestation of coercive social regulation.

There has also been developed an approach to multi-actor policy implementation. Ellermann and colleagues (Gravelle et al. 2012) also stress the ways in which it is not just states but an array of interrelated actors who participate in determining the outcomes of immigration control policies. As Côté-Boucher, Infantino, and Salter (2014, p. 196) write,

While modern borders have been taken to express the power of the nation-state, state power is nowadays exercised by delegating practices of state sovereignty to local, transnational and private actors outside the state apparatus and away from traditional state actors. Emerging actors and sectors have security mandates and engage in new policies in the name of security, while traditional security actors behave in new ways with new justifications: police forces, intelligence agencies, private security actors, technology companies, banks and airlines – among others – are collecting, exchanging and analysing data, making decisions about travel and mobility, and conceiving of their tasks as those of border security managers.

Such practices have prompted scholars to look toward what has been called multi-actor implementation studies (Hill and Hupe, 2002; Cerna, 2013). In such studies, researchers often look at the network of multiple sites and actors that must be coordinated in order to implement border control systems. This is often referred to as multi-actor implementation studies. In this network approach to migration control, the focus is on the interactions between different kinds of actors, including civil society groups, national governments, private sector firms, and individuals, and how these interactions shape migration policies (Koinova, 2017). Similarly, Hanf (1982, p. 160) writes that “implementation research must reconstruct the patterns of interaction and interrelationships among those actors through which information is communicated, co-operation established, and conflicts resolved.” One advantage of this approach, alongside other research in policy implementation, is that it helps to blur the boundary between policy-making and policy implementation in ways reminiscent of social learning in STS (see below, Sec.3). As Hill and Hupe (2009, p. 9) write, “in the implementation stage policy making continues”, and some scholars even prefer to conceptualize both policy making and policy implementation as part of the same process of policy formation. Additionally, it helps to highlight the potential role of non-state actors as meaningful explanatory variables for the way projects like the EUSS function.

3. A Promising Theoretical Framework: Implementing Migration Control IT

In this section, I look at the theoretical framework that I apply in my research on the EUSS. STS offers a powerful set of tools for researchers to understand how border control IT functions on an everyday basis and is shaped by the local contexts of its use. This section provides a theoretical framework developed by

STS researchers (many of whom are associated with the STS MigTec network¹⁷) that I believe is a helpful response to some of the limitations of the literature discussed in Ch.2. Specifically, this framework offers an empirical approach to the mundane aspects of border control IT which can be overlooked by the policy and state-focused accounts of critical security scholars. In Ch.5-7, I apply this framework to study the EUSS and, through its application, seek to advance it. In particular, I draw on the following concepts, explored throughout this section and drawn on throughout the thesis: implementation and translation (3.1), interoperability (3.2), social learning (3.3), and infrastructures (3.4).

As discussed in Sec.2, the security and migration literature, alongside the design-criticism-focused scholarship on the EUSS (Sec.1) – which share many basic theoretical tenets and are the most common approaches to studying the EUSS and migration control in general –, is a helpful way of understanding the origin of contemporary migration control IT and its impacts on populations. This research and its focus on design and policy criticism and holding the government to account has focused on the EUSS and related technologies as a story of government conduct – e.g., incompetence, attempts to increase state control, or an ideological conviction in the effectiveness of punitive measures in deterring migration. While this literature helps us understand the role of government and political ideas of security in driving the adoption of border control IT, it often has very little to say with respect to how these technologies themselves work or are used on an everyday basis and often falls somewhat short of engaging with the thorny questions of implementation.

To build on this literature, a group of scholars and researchers at the intersection of STS, IS, and critical border and migration studies has emerged.¹⁸ These scholars, following Pollozek and Passoth (2019, p. 609), seek to address a need to “bring some of the more technocratic and anxious diagnoses down to earth and to see some of the connections between the various transformations of contemporary borders in highlighted detail.” This is further highlighted by Leese (2022, p. 120), who complains that “scholars have [...] paid little attention so far to how notions of biopolitics, biometrics, and identity management translate into concrete technical architectures.” This emergent body of research has emerged over the past few years as a way of engaging STS’ focus on empirical studies of technology with critical security studies’ (see Sec.2) focus on security (Evans et al., 2021, p. 190) and the political implications of migration control technologies. As Andersson (2016b, p. 25) writes about the advantage of an STS perspective, “It [...] allows for shifting the focus away from the two poles of migration studies – the (political science) view that privileges policy and the (ethnographic) insistence on a grounded ‘migrants’ perspective’ – towards the material, virtual, and social interfaces of the migratory encounter.” Broadly speaking, STS literature on border control can helpfully build on the gap hypothesis literature advanced by political science discussed in the previous section since 1) it is more concerned with the technology than political science literature, while b) offering an account of the coordination and maintenance efforts required in the implementation and adoption of border control IT – the dynamics which are of interest to this thesis.

¹⁷ The STS Migration Technology (MigTec) network is a network of scholars studying migration control technology from an STS perspective. For up-to-date information about their current activities, see the following website (last accessed 15 November, 2023): <https://www.sts-migtec.org/people>.

¹⁸ Although arguably, these researchers are implicitly drawing on a much older tradition of surveillance studies (see Lyon et al., 2012).

One of the innovations of this group of scholars has been their development of a set of concepts with which to study the translation of border control IT from policy ideal to practice (Pelizza, 2021; Trauttmansdorff, 2022), going beyond conceptualizations of policy to empirical research on how technologies are used and evolve on the ground.¹⁹ This literature highlights the dependence of implementation and categorization on local contexts and the difference between modernist dreams of control and the realities of technology implementation. It also resists simple kinds of social determinism – i.e., the state controls migration with new technologies – in favor of mapping out the complex relations between actors in the development and application of IT. For instance, as Williams and Edge (1996, p. 2) write,

Simply establishing that technologies are 'socially shaped' leaves open many important questions about the character and influence of the shaping forces. In seeking to grasp the complexity of the socio-economic processes involved in technological innovation, SST has been forced to go beyond simplistic forms of social determinism which, like technological determinism, see technology as reflecting a single rationality - for example, an economic imperative, or the political imperative of a ruling élite.

By instead treating the range of actors who shape an IT system, its development, and its impacts as an empirical question rather than a given, STS work on border control offers an empirical answer to concerns raised by projects like the EUSS.

Furthermore, STS work in this area has applied the concept of infrastructure (developed further in Sec.3.5), with its emphasis on interlinked information systems and standards (Star, 2002). This is a theoretical framework that I believe holds promise for the further evaluation of border control IT and that is applied throughout this thesis. While there are other research directions advanced by these researchers at the intersection of STS and CSS, such as work on the public and contestation that form around border control IT (Amelung and Galis, 2023) and the imagined futures advanced with the development of these technologies (Trauttmansdorff and Felt, 2023), such work is not explored in lieu of focusing more on the implementation literature. This approach to implementation in STS research takes the local variation of practices and the activities of migrants not necessarily as aberrations but as part and parcel to the development of border control technologies. I believe this literature offers a promising way to look at border control IT, and this thesis seeks to contribute to it with an empirical study of the EUSS. In the rest of this section, I explore a range of concepts applied by research at the intersection of STS and critical security studies. These include translation (3.1), social learning (3.2), interoperability (3.3), infrastructure (3.4), workarounds (3.5), and classification (3.6).

¹⁹ It should be noted that while I use the term implementation as a plain-English shorthand for what these authors refer to by concepts like translation, the scholars referenced in this section do not themselves use this term. The term implementation has a longer history in IS and related disciplines (Peters et al., 2013), where it is used to describe the process by which technology comes to have effects in real world contexts, but the term has not come into use in work on border control due to these scholars relying on a different set of terms to describe the same things.

3.1 Implementation and translation in STS

In this section, I explore the work of STS and IS researchers on the implementation and translation of border control IT projects from policy to practice. This is the body of research that I find has the most promise for understanding border control systems such as the EUSS. In order to study how to control IT systems work in practice, research in STS offers theoretical concepts developed to study migration control IT systems as they work in practice and are developed in local contexts of development and use (Pelizza, 2017, 2021; Andersson, 2016a; Trauttmansdorff and Felt, 2023; Trauttmansdorff and Klimburg-Witjes, 2020; Bourne et al., 2015; Sontowski, 2018; Evans et al., 2021; Pollozek, 2020; Pollozek and Passoth, 2023, 2019) – this can help address the concerns in the critical security studies literature mapped out above, for instance its focus on policy over practice, its statism, and the gap hypothesis (see Sec.2.3). It can also help to ground criticisms of projects like the EUSS – which I personally believe are important, and share the normative agenda of migration scholars – in rigorous empirical investigation of border control technology and how it is used. In STS, implementation is rarely defined specifically (see the footnote above) but is captured by Pelizza’s (2021) concept of translation: this can broadly be thought of as the process of translating IT from a policy ideal through contexts of development and use, to an actual outcome. More technically, this process of translation refers to the process of developing a computer system based on a policy or legal requirements, and then this subsequently being shaped by the system’s interactions with other systems, issues when applied to real-world applications, newly-discovered or changing user requirements, changes to policy, and so forth; this is a process which has been widely documented in the STS and IS literature (for instance, Hyysalo, 2009; Ciborra and Hanseth, 2000).

Because of STS’ empirical focus, STS work on the mundane use of technologies in the migration sector remains a new field, with scholars often working where there are fewer issues around secrecy and more opportunities to collaborate with and inform the work of developers than in border security – such as companies, universities, and advocacy groups.²⁰ Doing so leaves this research up to fields with simplistic understandings of technology, leaving a blind spot in the study of a field with increasing social and political importance. As documented above (2.2), it is widely documented that in recent years, border control has become harsher, more politically salient, and more conducted with digital technologies. Largely following step with the increased public attention to migration, researchers in STS have recently become interested in the study of border control technologies, with a range of research institutes, groups, and chairs arising to advance this research field. STS has historically been engaged in questions of implementation and how technologies are modified in use and adapted across their life cycles, and researchers have started adapting this work to look at migration control.

Early models of technological change within STS, such as the Social Construction of Technology (SCOT), Actor-Network Theory (ANT), and the Social Shaping of Technology (SST) launched critiques of deterministic and essentialist ideas popular at the time and still often resorted to today (Latour, 1987; Pinch and Bijker, 1984). For instance, the idea that technology impacts society via the material world in ways predictable to designers and often difficult to change – see the early critical work of scholars like Winner (1980) or Akrich et al. (1992) – or that the best designs always succeed, leading to a progression of better designs over time, were empirically investigated and critiqued, being replaced by models that highlighted the contingency and social determinants of technological change (MacKenzie and Wajcman,

²⁰ One can speculate whether this results from convenience, issues of accessing other sites, or interest.

1985). Furthermore, a dominant idea in early work, that technology was able to be effectively controlled, with designers building scripts into their technologies that impact society in intentional and consistent ways, was critiqued by scholars who observed that these effects were both unpredictable at times and also that technology was shaped in by the process of its use. As Williams and Edge (1996, p. 12) write, in the STS account, “technological development is a spiraling rather than a linear process: crucial innovations take place both at the design and at the implementation stages, and are continually fed back into future rounds of technological change.” STS researchers began to observe what they called appropriation, or how users are often empowered or obliged to take control and creatively use technology to meet their ends (Dix, 2007; Kohtala et al., 2020).

The implications of bringing this different model of technology and innovation to bear on border control IT are profound: If technology changes through its diffusion and use, then how can border control officials claim to have full control over the technology they develop, to know how it will look from the get-go, and assure the public they can lead the fair and safe technological deployment?

In their study of border control, STS researchers – including but certainly not limited to Annalisa Pelizza, Silvan Pollozek, Klimburg-Witjes, Paul Trauttmansdorff, and Georgios Glouftsios – have the implications of this model of technology development, primarily in the case of technologies applied at the Schengen borders. With respect to border control technology in practice, researchers examine how social sorting and categories of migrants are actually created and enforced through political processes and digital technologies and how they are put into practice in different contexts. Scholars have sought to understand the nuances of developments in internal border control and the implications of specific contexts and patterns of use of these technologies and users. Sontowski (2018), for instance, shows that rather than smooth sailing, the process of implementing biometric technologies for border control is characterized by experimentation, uncertainty, and contestation. Pollozek and Passoth (2023) likewise document the way Frontex operates by drawing on the data of other agencies and attempting to make due despite limitations in available infrastructure. They need to coordinate a range of different data sources and offices and often have to deal with non-universal classifications. They argue that rather than a centralized organization controlling the border, European border control is characterized by collaboration, coordination, inconsistency, repair, and quality assurance between a range of agencies.

These authors offer a significantly more fragmented picture of border control than is offered by the critical security literature discussed in Sec.2, owing to the rigorous empirical studies conducted by STS researchers and the tendency to focus on the day-to-day realities of technology implementation and the breaking down of theoretical categories. Such difficulties have also been recognized as a more generic aspect of information systems by STS and IS researchers, so applying their concepts to border control offers a way forward in understanding how the digital border functions in practice. In the next section, I will show how researchers have studied another aspect of information systems as applied in the border control context: interoperability.

3.2 Interoperability in STS

In this section, I deal with writing about interoperability in border control IT. As mentioned in the previous section, there has been an attempt to realize the policy ideals of border control by using interlinked information systems. This is a general trend in e-government, with immense efforts around, for instance, cross-border health services and cross-government information sharing, in order to better

manage the interactions between governments and citizens (Scholl, 2005; Gottschalk, 2009). It has been especially true in the EU border control case, in which interlinked databases have been used to coordinate between member states in the control of Schengen-bound migration. This has transitioned interoperability from a technical term in IT to a political priority in EU border control (Bellanova and Glouftsiou 2022; Brouwer, 2020). The section shows how this concept has been used in STS research on border control. As the reader will see in further sections, there are close connections between the concept of interoperability and the concept of infrastructure, which rests on creating standards between different technological systems (Star, 2002).

Writing about interoperability in Schengen border and security databases, Leese (2022, p. 155) argues that:

the interoperability initiative aspires to fundamentally overhaul the governmental approach to identity in the Schengen area through a number of technical means that will biometrically verify and cross-validate identity records between European border management, migration and security databases. This produces a new administrative super-layer that is no longer exclusively concerned with the production of identity, but first and foremost with identity management that is geared towards the production of ‘truth’ in the form of legible and trustworthy identity records.

Leese further writes that the goal of such interoperability between EU MS databases is to ensure there are no blind spots in the sense of data being present in one database or accessible to one person but not to another. For instance, Trauttmansdorff and Felt’s (2023) work on the European Union Agency for the Operational Management of Large-Scale IT Systems (eu-LISA) highlights the agency’s role in selling a vision of interoperable information infrastructures as a solution to border security problems. On Trauttmansdorff and Felt’s account – following similar STS work on sociotechnical imaginaries and promises (Spektor, 2019) –, eu-LISA needed to engage in a bureaucratic and coordination struggle, the outcome of which was not fixed and could not be treated as an explanatory variable in analyses of EU border security.

Pollozek and Passoth (2023, p. 427-428) exemplify the STS approach to interoperability in that, in addition to an incomplete process, they approach interoperability as something that is achieved in only provisional and ad-hoc ways²¹:

With our empirical analysis, we can see that also on the mundane level of data handling, Frontex [shorthand for the European Border and Coast Guard Agency] does not build a fully standardized and integrated data infrastructure but rather interconnects a loose patchwork of different information systems and institutional ecologies. One might think that there has not emerged an infrastructure at all. Not only one but many information systems are in use, but neither integrated into a ‘system of systems’ nor made fully compatible through shared technological and semantic standards. Many different installed bases, organizational ecologies and work routines need to be aligned within a setup that is rolled out only temporarily and with rotating personnel. Yet, we still

²¹ This has also been the direction of travel of information systems over the past decades, with scholars documenting how there has been a transition from centrally-designed and monolithic IT systems to modular applications which can be assembled and configured in different ways.

find ‘organized practices’ as well as implemented technologies and devices that aim to accomplish stable interconnections for ensuring data circulation across actors and sites.

In this sense, they show that rather than achieving perfect state vision as cautioned by the critical approaches outlined above, European border control officers are confronted with an organizational and technological messiness and find ways of working through it. Pollozek and Passoth document a range of ad-hoc attempts by officials to patch up the lack of integration between different IT systems, creating workable solutions on a practical level but not the interoperable digital border envisioned by policymakers. This insight is core in informing my third research question and my general interest in how people make information systems work in practical contexts – e.g., proving one’s right to work – despite their various technical flaws.

3.3 Social Learning: From the State to Administrative Coordination

In this section, I explore how public administration and the state are discussed in STS’ work on migration control. As mentioned in the previous sections, lawyers and political scientists often frame the state as upheld and formed by law (Wilkinson and Dowdle, 2016) and as the prime mover behind migration control IT – migration control technologies are understood as being driven by public law and the administrative discretion of the state (see Sec.2 of this chapter). The STS literature on border control examines how border control IT is constructed through the process of coordination of a range of people, agencies, and technologies, of which the state is just one (Trauttmansdorff and Klimburg-Witjes, 2020). The question of coordination is a longstanding theme in STS, with some of the earliest writings in the field having to do with building, maintaining, and coordinating networks of actors to develop and deploy new technologies (Hughes, 1993). For instance, the work of writers like Law and Callon (1992) documents the crucial role of building and maintaining social networks in order to offer a technology project financial and political resources. Such an approach has been used by STS researchers to understand border control as well. This subsection reviews this work. First, it describes how STS literature has reframed border control from a question of states to a question of networks. Second, it identifies how STS researchers have emphasized the need to coordinate local-level actors. Third, the section shows how STS researchers have been attuned to how these actors shape the implementation of border control technology. Finally, the section notes how these concerns in the STS literature have drawn on a wider conversation within the field, in particular that around social learning.

The Schengen case, on which much of the STS research has focused, has been particularly prominent in informing how these scholars see border control. Rather than a question of all-powerful states, Schengen and EU border control is characterized by a large number of agencies operating both at the EU and MS levels, including the various national border agencies, often with similar remits and similar information. This coordination is understood as essential given that migration control is typically a multi-agency affair that relies on the use of interoperable information systems. Work on EU-level government and migration control infrastructures has highlighted the fragility of the coordination between these agencies and the data flows between them. In this sense, the EU is a rather interesting case of border control due to how it highlights the immense amount of interstate and inter-organizational collaboration required in these endeavors. Researchers such as Andersson (2016a) document the immense coordination work between the practices and data flows between EU MSs, the Frontex control rooms in Warsaw, and partners in Africa involved in controlling migration. Andersson documents how the administrative coordination of all

of these different agencies is a significant challenge since it can be difficult to convince them to share data and resources. Border security, then, from an STS perspective, is at least partly a question of building and maintaining networks of actors around IT projects.

On a local level, Pollozek and Passoth's (2019) work on logistics in EU border control highlights the immense coordination effort required to establish and fix migrants' identities and input them into European-wide databases such as the European Dactyloscopy (EURODAC). The EURODAC is one of the main focuses of STS work on migration control, given the very visceral ways in which it links ground-level registration practices with interoperable multi-state IT systems. While this literature builds on existing work in political science which highlights the culture of suspicion in border control, it also identifies the ways in which identification and reduction of uncertainty about migrants' identities is coordinated through complex bureaucracies and information processing routines. Pollozek and Passoth (2019, p. 615) identify how this is the basis for a "dispersed form of control" carried out by a range of actors across various sites. While political science and security studies literature focus on techniques of migration governance, such as external border control, the emphasis is still on the state as the prime mover, even as it struggles to coordinate itself internally and cope with external constraints. Furthermore, technology is seen as largely a non-issue in this literature. STS researchers instead follow the constructivist accounts of technology development (Ciborra and Hanseth, 2000) in treating control over technology as an elusive goal – which gets further away as information systems become more linked and complex in an effort to control nature and society – rather than a given. Methodologically, this leads these scholars to often focus on the ways users interact with migration control IT rather than how these technologies are articulated in policy documents (Amelung and Galis, 2023, p. 5).

Furthermore, by focusing on local-level coordination and operation of border control technologies, these researchers are able to highlight how the point of use and implementation shape the development and consequences of border control tech. As Amelung and Gallis (2023, p. 334) write about Frontex, "Inconsistencies and controversies, tensions and frictions are not exceptions, but are a constitutive and even productive part of infrastructures fuelling an ongoing process of (re)ordering. Such modes of (re)ordering can be characterised as provisional and mostly informal. They thereby support a rapid intervention into Hellenic border operations by Frontex and other security actors and give Frontex a central position in the ecology of knowledge production of European border control." Local variation in this context, rather than a problem to be overcome – or even something that can be taken advantage of – is seen as a normal part of IT implementation, especially in the construction of large-scale interoperable information infrastructures. This has been widely noted in the II literature (Monteiro et al., 2013) by scholars who suggest that part of the successful adoption of new technologies is learning and adaptation on a local level.

Finally, I will show how this literature has drawn on a wider conversation within STS about STS research on innovation has criticized older views of design which contend that designers create artifacts that steer, shape, configure, constrain, and so forth, users, in often politically salient ways (Stewart and Hyysalo, 2008). This criticism questions a unidirectional vision that technology impacts users according to its design and builds on earlier work by Suchman on how technologies become integrated into work practices and her push to move

from a view of design as the creation of discrete devices, or even networks of devices, to a view of systems development as entry into the networks of working relations - including both contests and alliances - that make technical systems possible. This represents a change insofar as the prevailing order of technology production is based not in acknowledgement and cultivation of these networks but in their denial in favor of the myth of the lone (male) creator of new technology on the one hand, and the passive recipients of new technology on the other (Suchman, 1993, p. 2).

The realization that technologies need to be successfully integrated into the lives of users, including the professional practices of the firms where they become used, is foundational to contemporary STS, organizational studies, and IS. In one sense, it offered a space to resist simplistic and empirically languid characterizations of technology design found in deterministic approaches. In another sense, however, it spurred STS researchers to look beyond the laboratories of early STS research to the creative role of actors who work with technologies when they leave these settings (Savolainen and Hyysalo, 2021). This process is sometimes called social learning (Stewart and Hyysalo, 2008) or *innofusion* (Fleck, 1993). As Stewart and Hyysalo (2008, p. 300) “In the sociotechnical usage, social learning denotes the reflexive yet often negotiated, complex and “political” processes in transforming environment, instrumentation and work, that reach beyond single groups of actors.” In layman’s terms, this refers to the process of studying how technology is adopted within, changed by, and changes a context of use. In a related approach, Timmermans and Berg (2003, p. 99) refer to their research as utilizing a *technologies-in-practice* approach, studying how politics emerge in the use of technologies instead of making abstract claims about their political biases. Political outcomes of technologies, STS researchers contend, emerge not merely from developments within development teams but also from the longer processes of adoption.

Such an approach has profound implications for the study of border control. Rather than design being the remit of the Home Office and developers and negative impacts accounted for by the dysfunction and racism within that department, one would expect a project like this to change shape over time, and to have varied impacts, mixed policy objectives, involvement from a wide array of non-state actors, and be shaped across a range of points of time and venues (including use). In particular, literature at the intersection of STS and Information Systems (IS) In the STS literature, there is a growing conversation with critical security studies (CSS): the intersection of social studies of innovation and social studies of national security. Such literature has explored how border control projects, as technologies, policies, and laws alike, can be understood as processes of innovation alongside securitization. Research tries to show how projects are translated from top-level policies and public opinion through the design, implementation, and use of digital border control technologies. Much of this literature draws on Actor-Network Theory (ANT)-style analyses of translation and creation of new categories and forms of knowledge about migrants (see in particular Pelizza, 2021). In the next section, I address the concept of infrastructure, which has been used widely in STS work on border control and builds on the concerns discussed in this section.

3.4 Infrastructures and Infrastructuring

In this final section exploring STS’ contributions to the study of border control technology, I introduce how researchers have conceptualized border control technologies as information infrastructures (IIs). This has united the earlier ideas of translation and multi-agency coordination into a cohesive framework that

also points scholars to identifying the dynamics of large-scale and distributed IT. It has followed from the observation within STS and IS that many information technology projects have become vast in size and scope – something which will be further elaborated on in the methodology chapter.

Researchers have followed IS in understanding that stand-alone IT systems are being replaced with systems of systems (Hanseth, 2014). IS researchers have documented how IT systems in many fields have become interlinked and have grown substantially in their operational remit and number and variety of users. As Roland et al., (2017, p. 4) write, IT projects have been observed to have been expanded with respect to “the number and distribution of heterogeneous settings, developers, users and uses of a (software) product over time.” Alongside IS research, the work of Thomas Hughes’ study of large technical systems (LTS) and the Actor Network Theory (ANT) developed by Law, Callon and Latour, among others, are valuable touchpoints in STS researchers' move to studying infrastructures.

Susan Leigh Star, who is among the pioneers of II research, built upon these classical STS frameworks in several important ways. Her research on the local practices that support research infrastructure (Star and Strauss, 1999) and on how science and IT projects cover very large temporal and geographic scales has spawned a field of research focused on understanding the nature and evolution of ever larger and more expansive IT projects covering a diverse range of social contexts. “Infrastructure” is defined by Bowker et al. (2010, p. 98) as “pervasive enabling resources in network form.” Infrastructure, centrally, is vast, and relied upon for other parts of work and life. In greater detail, Star (1999) defines infrastructures as having a variety of key characteristics. They are as follows: “Embeddedness; transparency; reach or scope; learned as part of membership; links with conventions of practice; embodiment of standards; built on an installed base; becomes visible upon breakdown; is fixed in modular increments, not all at once or globally” (Star, 1999, p. 381-382). Hanseth (2014, p. 35-36) further provides the following definition of II, tracing out how scholars have used the term in response to the growing complexity of information and communications technologies:

a shared, open (and unbounded), heterogeneous and evolving socio-technical system (called an installed base) consisting of a set of IT capabilities and their user, operations and design communities. Typical examples of IIs are the Internet, solutions supporting the interaction among manufacturers along a supply chain and portfolios of integrated applications in organisations (often several thousand in number).

These definitions bring together two areas of concern – just how large-scale many modern IT projects are and the core role of local organizational dynamics in shaping how they operate. Star’s work on the use of technology in different professional settings shows how information systems and infrastructure rely on complex relationships between various actors in their development and use – adoption and use are not fixed in advance but are processes of negotiation and adjustment (Star and Ruhleder, 1994). These processes can be highly political and have substantial roles in shaping work and communication. As Star and Bowker (1995, p. 41) write, “Information infrastructures provide the tools—words, categories, information processing procedures—with which we can generate and manipulate knowledge. They also reify particular configurations of work practice by shaping the world within which tools can be used.” Similarly, Hanseth and Monteiro (1997) have investigated the way that information infrastructures, through the development and enforcement of standards, inscribe certain kinds of behavior among

organizations and users. As they write, this can be an explicitly political process, by which certain interests are written into the design of infrastructures and the actions of various users need to be aligned (Hanseth and Monteiro, 1997, p. 206). Infrastructures thus display a tension “between standardization and flexibility” (Hanseth et al., 1996) as common rules for communication must be established between component IT systems, but on this basis, a degree of change and adaptation can be expected.

Building on this body of research and its efforts to show the effects of infrastructures on organizations and work, STS researchers have applied the concept of infrastructure to the study of border control. Annalisa Pelizza (2017) has relied on the concept of infrastructure in her study of immigration registration infrastructures in Southern Europe. She investigates the first encounters of migrants with EU migration registration infrastructure by focusing on the EURODAC and Hotspots in Italy and Greece. Describing the EURODAC through the language of information infrastructures, Pelizza can focus on the relationships between the local contexts of migrant classification and data entry and the IT systems operating at the EU level to process and analyze the biometric information of migrants – rather than stand-alone IT systems or sites in which border control practices take place (see 2.1), Pelizza conceptualizes all of these sites and IT systems as part of an infrastructure, encouraging investigations of the interconnections between them and how the development of information infrastructure for border control impacts the various sites at which this work takes place.

Pelizza draws on Susan Leigh Star’s foundational work discussed above, which laid the foundations of II by elucidating the role of classification in and standards in the development of IIs (Bowker and Star, 1999). In drawing out the implications this work has for border control, she particularly focuses on 1) the centrality of migration registration in determining the life chances of migrants and 2) the role registration infrastructures have in classifying people in ways that make them legible to the state. Pelizza uses the II perspective in her study to illustrate how digital systems used in the registration and identification of foreign populations generate classifications of migrants (more or less eligible for entry, more or less dangerous, more or less worthy of aid), and to show that when a migrant encounters a part of one of these IIs (at border checks, hotspots, or at a visa application center, etc.) they are fit into a classification and provided with certain opportunities offered to this category. Their data then flows through a range of interconnected databases. It is the way in which hotspots are entry points into an infrastructure that makes them interesting from Pelizza’s perspective. As she writes:

Hotspots are thus the first step in the procedure of sorting migrants into three alternative paths: ‘relocation’ or ‘resettlement’ to another Member State (for those identified as in clear need of international protection), or ‘return’ to the country of legal residence (for those who are not deemed in need of protection). They can be conceived as ‘routers’ that create ‘early entrenchments’ in sorting individuals, liminal situations in which past identities are assessed and translated into proto-decisions. (Pelizza, 2017, p. 1).

Pelizza’s research and theoretical framework are central points of reference for this dissertation, offering a common framework for understanding the interconnections between border control IT systems, the frictions between them, and the work required to maintain them. As she writes, one of the tasks of STS researchers working on border control is “to problematize the rhetoric of seamless integration, to stress

the diverse, distributed implications of infrastructuring” (Pelizza, 2023, p. 163). This is a core part of II research, seeking to show the immense work that is required to integrate highly complex IT projects.

Following Pelizza, in their discussions of EU-wide interoperable databases, Pollozek and Passoth write, “The complexity of infrastructures never allows full control, installed bases only allow for an incremental and partial update, the fragility, decay, and precariousness of materials require ongoing maintenance and repair, or the alignment of technological systems to local contexts may involve ongoing mediation work” (Pollozek and Passoth, 2023, p. 414). This fragility of IIs makes local variation an expected part of their operation. Pollozek and Passoth (2023, p. 415) go on to write:

First, practices and processes of infrastructuring need to rely on existing socio-technical installed bases while at the same time transforming them. Data infrastructures are neither built *de novo* nor at once. They are built upon installed bases including ‘not only artifacts but human habits, norms, and roles that may prove its most intractable elements’

Such an emphasis on the role of the installed base in the STS literature characterizes much of STS work on border control, showing that in addition to choices internal to a project (see Sec.1 of this chapter), new IT needs to be fitted with a range of other technologies and practices.

This work on infrastructures is taken up throughout the thesis, especially in Ch.4, as I view it as a helpful way of understanding the way the EUSS works on the ground and connects with other e-government systems. Workarounds, which are also a core part of STS literature on IT systems and infrastructures, are addressed later on in Ch.6.

4. Research Questions: Application of the Theoretical Framework to the EUSS

In this final section, I briefly describe how I have applied the theoretical framework offered by STS and IS research on migration control to understand the cases of the EUSS and the advantages it provides, and how it has led me to my research questions introduced in Ch.1. While much of the STS research on border control has focused on the Schengen border, my study is focused on a case that is fairly different. First, the EUSS is a case of applying border control technology to populations resident in a territory where their legal status changes. Scholars point to the fact that the border can be rather mobile. It is not a static entity, and historically, one sees examples in history in which a border moves, and people need to adjust to this. The EUSS offers a chance to explore the dynamics of such a moving border and how technology is used in response to it – something that the STS literature has yet to do.

Following this literature review, I use STS and IS’ theoretical approaches to border control to frame the study’s research questions (see Ch.1). STS research on border control technology offers a range of theoretical concepts with which to understand projects like the EUSS. My project uses these to inform investigation of the EUSS.

The empirical chapters of the thesis address the study’s research questions sequentially, focusing on the problems people had with the EUSS (Ch.4), the ways people got support with the EUSS (Ch.5), and the

presence or absence of workarounds (Ch.5). Overall, these research questions and my answers to them attempt to tell a story about the EUSS that shows how people coped with the disruptions of the introduction of a new IT project for border control. This story follows STS literature in starting from how it worked on a day-to-day basis rather than a theory or critique of the state. In doing so, the thesis, and my answer to RQ4 in particular, highlight the value of an STS approach to border control IT. Throughout the thesis, I offer several concepts, drawn both from STS' existing engagements with border control and from elsewhere within the field (namely, social learning, interoperability, innovation intermediaries, and workarounds), which I show offer a valuable avenue for further research.

To conclude this chapter, I will provide a brief note on positionality. This chapter, and the thesis in general, has tried to carve out a middle-ground between being critical of the government for its draconian attempts to control and police migrants and also acknowledging and studying how IT systems are shaped by their contexts of use. First, I will explore the status of the gray literature produced by civil society researchers discussed in this chapter. This literature often approaches the EUSS from a highly normative angle, focusing on how it negatively impacts EU citizens in the UK. It often calls on the government to make substantial changes to the EUSS and is highly critical of Brexit, the Home Office, and the design of the EUSS.

In many cases, the grey literature on the EUSS is a valuable source of information about the scheme, as it offers detailed descriptions of problems that people had and some of it is based on empirical research (e.g., surveys, interviews, and analysis of official statistics). However, reportage is likely to be biased towards negative outcomes. Additionally, this literature can be criticized for, typically attributing problems with the EUSS to malign government decision-making rather than the challenges of building new migration control IT and integrating it with existing IT and practices. Due to their normative agenda, civil society researchers are examining the scheme to call on the government to ameliorate issues with it and thus are often blinded to alternative explanations of the problems they are documenting. Examining these different sources of issues is where an STS perspective can provide a helpful complement to existing research.

On the other hand, STS research has been criticized, both from inside and outside the discipline, for portraying technologies as highly configurable to the extent that developers have little control over them or responsibility for their impacts on society. If such a critique can be accepted, then STS sits very poorly with the tradition of research within migration and critical border studies, which has sought to critique attempts by governments to use new technologies to sort, control, and police people on the move. One of the innovations of work at the intersection of STS and critical border studies has been to study in detail the functioning of border control IT within concrete contexts of use and how it is shaped by these contexts while still documenting how it shapes the lives of migrants in deeply concerning ways. This was a significant motivating force for my reliance on this theoretical framework and is a project that I have sought to carry forward in my research. Doing so responds to my collaboration with and deep admiration for the work of the3million and my concerns regarding the repeated use of technology in human rights violations by the British government.

Chapter 3. Methodology:

An Implementation Study of the EUSS

Summary

In this chapter, I describe the study's methodology. In response to the RQs, I sought, but ultimately did not succeed, to develop a multi-method study that could trace how the EUSS operated in the wild during its first months of use. The initial research design of the study was a response to a series of challenges. These challenges are described in detail in Sec.2 and include the large, diverse, and geographically distributed user group and the EUSS' use of online applications (see Ch.1).

One of the barriers to studying the EUSS was that it was used (e.g., applied for and used for immigration checks) by a large and diverse population distributed across the country. According to early estimates, this was around 3 million eligible individuals (Gentleman. 2019), but data on EUSS applications eventually showed more than six million applicants (Sumption and Cuibus, 2023). There was no single application or processing center to enter to observe the interaction between users and the EUSS. This made the application of a methodology like the one utilized by scholars like Pelizza (2021) and Pollozek and Passoth (2019), in which a single site of work at a processing center was observed, infeasible. The pandemic also prohibited in-person interaction with research participants, creating the need to find alternative ways to understand the use of the EUSS during this time. My response to these challenges was to develop an experimental methodology that would allow me to understand how this vast, diverse, and dispersed population interacted with the EUSS. This methodology aimed to obtain a large sample of written complaints about the EUSS to understand how people went through the system – initially through web scraping and, in the end, through a report form and interviews. I brought together these different complaints to qualitatively examine how people used the EUSS and empirically examine common framings of the EUSS.

The methodology was also innovative in bringing together intermediary interviews, a reporting tool developed in collaboration with the advocacy group the3million, and data scraping in a way that has yet to be done in STS research. My choice to develop this methodology was inspired by discussions within user-focused information systems (IS) research, in particular around the multi-site research for the study of large-scale integrated information infrastructures (IIs) (See Cresswell et al., 2020; Hyysalo et al., 2018). This body of research, outlined in Section 2 of this chapter, has sought to develop methodologies that are suited for the study of distributed technologies such as the EUSS.

My research contributes to this discussion by 1) introducing challenges offered by studying technologies used for national security and immigration purposes and 2) suggesting quantitative, big-qualitative, online, and collaborative research methods (reliance on activists as research partners) as a way of advancing BOAP and related frameworks in their attempts to deal with the daunting scales of IIs (although it should be noted that in practice, this ended up being an interview-based study). In doing so, the chapter seeks to offer reflections that will be useful for researchers working on big qualitative and multi-methods research designs in STS/IS, in particular in areas with little transparency from developers. Specifically, the study consisted of interviews with applicants and status holders conducted as part of

the3million, interviews with intermediaries, which were used to understand how people got support and supported others with dealing with the EUSS, document analysis, and scraping of advice forums to obtain a wider sample of concerns people were expressing about the EUSS. These methods were used in tandem in order to obtain a large qualitative dataset which could help to understand what problems people had with the EUSS and how they responded to them. Overall, the goal was to explore the use of the EUSS at a national scale, by large numbers of people and organizations, rather than within the narrow contexts capable of being examined in traditional interview-based or ethnographic studies.



Figure 7. Research Methods.

However, the experimental methodology and use of scraped internet data (namely public forums and public Facebook groups) became contested due to concerns with the ethics and legality of data scraping (ICO, 2023), and I made the decision to exclude all social media and quantitative data from the thesis. The issue of the ethical problems of scraped data will likely become more salient in the coming years, given the ongoing controversies surrounding major social media platforms – especially Facebook and Twitter (Calma, 2023) – and large language models, which obtain much of their training data through scraping. The resulting study is a qualitative interview study of the EUSS based on interviews with intermediaries and users and rests on my collaboration with the advocacy group, the3million. This study seeks to apply the theoretical frameworks of STS to examine interviews with users, civil society employees, and employers in the first years of the EUSS implementation.

The chapter is structured as follows: Sec.2 will describe the methodology's response to the various challenges of studying a project like the EUSS. Sec.3 describes the methodological framework alongside some of the methodological literature and discussions that inform it. Sec.4 then discusses in detail the specific methods used in the study. It also describes the ethical issues and limitations of the study, overall methodological framework, and relationship to the debates about methodology in STS. In particular, I relate the study to recent work within user-focused innovation studies to rethink the scales at which STS' methodologies need to operate and the translational approach to border control advocated by scholars like Pelizza. In doing so, I set up my methodology by engaging with questions about how STS should study border control and geographically distributed IT projects. I will also touch upon potential criticisms and

weaknesses of this approach. Section 3 will discuss the methods used (including data collected and analysis performed) and their relationship to the research questions. Finally, in Section 5, I will discuss the challenges and limitations of the methodology and how I sought to address them.

1. Challenges of Researching the EUSS: Difficulties of Studying Distributed Information Systems.

In this section, I describe the challenges posed by looking at the EUSS as an object of social research. From the beginning (when discussions of it first began in late 2019), the study's methodology was a response to a series of expected obstacles. This section explores the problems the EUSS presents for researchers, in particular focusing on how the development of the study's methodology responds to anticipated challenges. Presented as a list, these challenges are as follows:

1. First was the lack of transparency of many actors involved, namely the Home Office, the contractors developing the various components of the EUSS (see Ch4), and various groups implementing it for status checks, such as the DWP, the HMRC, the DVLA, and border guards. Since the EUSS is a border control system seen as a matter of state security, developers and government officials were notably tight-lipped and hesitant to discuss the project.
2. Second was a large, heterogeneous, and geographically dispersed group of users presumed to interact with the EUSS primarily as a self-service system (and thus not congregating in any given physical location). EU citizens and their family members are subject to changing rules and the need to apply to a new system, but this does not need to be done in a single place. Such a problem makes the EUSS different from the research object of studies of EU border control (Pelizza, 2019; Andersson, 2016), in which there are specific places at which people apply for immigration status or are registered in a database. This is a problem of the difficulties of studying distributed information systems, theoretical responses to which will be discussed in the next section.
3. The EUSS is, furthermore, a very large object of study. Researchers of the EUSS face many of the same issues of access faced by researchers working on border control and immigration detention. However, unlike these objects of study, it is not clear where a researcher should go to collect data. There is no hotspot, refugee camp, or immigration removal center (IRC) a researcher should try to enter to study and collect data. The EUSS was developed by multiple private contractors, is composed of multiple subsystems (for different government agencies and types of users), and accepts applications using a smartphone or computer or at council offices accepting paper applications, so users do not necessarily congregate in any given place.

The second and third of these problems, as highlighted by scholars working on information infrastructures (IIs), concern large scales concerning geography and diversity of user populations. It is also the result of a tendency in much of e-government to have people interact with the government remotely via their smartphones and computers (Fountain, 2001; Andrews et al., 2016).²² Unlike in organization-focused studies or single-site ethnographies, this tendency creates a problem for researchers who wish to engage with the remote users of online services. This problem also results from the particular characteristics of EU citizens in the UK. This is a linguistically and geographically diverse group, and it is not obvious that

²² Self-service e-government and how it played out in the case of the EUSS will be discussed further in Ch.5.

(and rather an open question whether) many EU citizens see themselves as part of the same diaspora. A user group as broad as that of the EUSS poses immense practical challenges for a researcher.

To achieve these goals, the study sought to 1) build on the multi-site frameworks and their focus on multiple sites of implementation and design-in-use, 2) adopt a multi-methods research design, including adopting quantitative and collaborative methods in addition to the interview research typical in STS.

2. Methodological Background and Framework: Multi-Site and Multi-Methods Research Designs for Studying Distributed IT Projects

This section engages with debates in STS literature that serve as a backdrop to this thesis' methodology. These debates are approached as a response to the challenges of studying the EUSS discussed in the previous section. Given the EUSS' diverse and distributed users and impacts, I initially adopted a methodological framework influenced by recent discussions around the Biography of Artifacts and Practices (BOAP) and related frameworks (Hyysalo et al., 2018; Hyysalo, 2021), which seeks to document the impacts it had in all of these different locations. The section first explores the development of the BOAP and related frameworks, then explores how they influenced the research design and helped me address the challenges described in the previous section. It should be noted early on that while the BOAP was an inspiration for this study's methodology, the study is methodology distinct from BOAP studies due to its short timeframe and use of methods other than ethnography. The section is followed by a description of the specific research design employed for this study of the EUSS.

Classical STS research on technologies starts from the idea that one should study technologies the same, whether they worked or did not work, and without any presumptions about the social relations they ought to inhabit (Wyatt, 2008). In contrast to political science, STS researchers typically study phenomena such as technology and the state without basing analyses on prior assumptions about their form. Classical STS theories like Actor-Network Theory (ANT) and the Social Construction of Technology (SCOT) propose an examination of the heterogeneous realities that contribute to the creation of scientific knowledge and technological artifacts, empirically mapping out the actors and relationships that bring them into being (Bueger, 2013). As Woolgar and Lezaun (2013, p. 322) write about the ontological and epistemological assumptions of STS, "the field has long advanced an analytical programme that foregrounds the instrumental, performative and material dimensions implied in the making of facts and artefacts." This methodological approach is to follow the actions and relations of actors involved with various different projects.

In contrast to, for instance, much of political science, and based on the heavily empirical and constructivist tendency within STS, technology researchers within the field conduct detailed, usually qualitative research on the ways actors relate instead of relying on set concepts (i.e., society or the state). As Hanseth et al. (2004, p. 119) write,

A central idea and motivation behind ANT is to study the construction of things normally taken for granted. The border between the social and the technical is one such. The border between

design and use is another. This distinction is also assumed to be constructed. ANT sees both as negotiation processes where various networks are linked and transforming each other.

The idea that STS should focus on rich empirical research not informed by prior theoretical constructs and instead focus on processes of constructing scientific knowledge and technologies has led in practice to a highly flexible and qualitative-oriented approach to methods. Law (2004) advances an approach that entails the flexible use of methods to explore an artifact from different angles, to escape a certain vision of it imposed by a methodology - quantitative methods will tend to see the world in a quantitative way, and so forth.

Thinking beyond work in STS' and its focus on single research sites and artifacts, the work of a group of researchers has engaged in a discussion of how to study large-scale and distributed IT systems. These scholars emerged from research on large technical systems (Hughes, 1993) and information infrastructures (Hanseth and Monteiro, 1998; Monteiro et al., 2013) – for instance, highways, mobile telecommunications, large-scale scientific or police information sharing, etc. – which present problems for researchers working with interviews and in particular lab ethnographies. Researchers documented the increase in complexity of many information technologies, with Hanseth (2014) writing that the immense growth in scale of many information systems (including their geographic scale, number of users, and number of components) have made it difficult or impossible to observe the relevant phenomena using single-site methods.

One response to these concerns and the growing interest in IIs was the development of the Biography of Artifacts and Practices (BOAP) framework. As Monteiro et al. (2013, p. 576) write, “An II perspective [...] would contribute by supplementing a local view with what might be thought of as an ‘extended design’ perspective to capture how workplace technologies can be shaped across multiple contexts and over extended periods of time.” In attempting to turn such a theoretical view into a methodology, this framework proposed to use long-term multi-sited ethnographies conducted by large research teams.²³ Ethnographies, with their focus on the collection of rich and detailed qualitative data across multiple sites and timeframes are relied on to obtain rich detail of how the social contexts in which an II operates. In order to show how IIs developed across these large scales while maintaining the level of rich qualitative detail of the local studies characteristic of ANT and traditional STS research, BOAP studies, for instance, Liu et al. (2017), focus on conducting large-scale multi-site ethnographies which can obtain large amounts of qualitative data to map the development of IT systems and infrastructures over time.

In addition to ethnography, multi-site research programs in STS have sought to utilize other kinds of data, such as administrative data, to understand distributed IT systems. For instance, building on the BOAP, which simply relies on multi-site ethnographies, repeating the same kind of method to understand the different scales and sites across which infrastructures develop, Silvast and Virtanen (2019, p. 466) advocate the use of surveys and document analysis. This is done within an overall qualitative and interpretative framework, seeing IIs as constructed through the interaction of different social contexts.

²³ STS is notable in its exploration of these problems in the context of information technology, but it should be acknowledged that STS is not alone in needing to contend with large-scale phenomena. For instance, see the comparative work of political scientists on international politics (Mahoney and Thelen, 2015).

Their research points to the ongoing discussion of how different methods can be flexibly and pragmatically combined to collect data about distributed IT systems.

This body of research influenced this study in a variety of ways. From this body of work, and STS more generally, I draw on how technology is understood – as socially constructed by a large and heterogeneous range of actors, and more specifically in the case of the object of study of BOAP studies, large and geographically distributed. I also draw on BOAP’s epistemology, the idea that distributed information systems can be understood by looking at a range of different contexts in which they are developed and used. BOAP and multi-site STS research designs are drawn on in how the study focused on researching everyday life, in contrast to quantitative methods in which everyone is an individual data point and not a social site. As I will show in the next section, I have adopted different methods, such as web scraping and collaboration with a civil society group, to address the same concerns as multi-site STS research designs.

3. Description of the Methodology Used in this Study

In this section, I outline the methodological framework of the study and the specific methods used. To answer my research questions (see Ch.1, Ch.2), inspired by these discussions of multi-method research designs in STS, and in order to understand how the EUSS operated in the early period of its implementation, I initially employed an experimental multi-methods study of a distributed IT project for migration control (see the previous section). This study was a pragmatic result of looking for different kinds of opportunities given all these problems and my interest in distributed technologies and practices. The study was multi-site and multi-method in the sense that it focused on how people used the EUSS at different sites of use (e.g., employment checks, airports, and the Driver and Vehicle Licensing Agency (DVLA)) and used several different methods to obtain a large qualitative dataset about this use. Namely, the study initially used a large number of intermediary interviews and user interviews (266 interviews in total, consisting of 233 with applicants and status holders, thirty-three with employees at civil society organizations, and 2 with HR professionals), scraping of advice websites, scraping of Facebook groups, and a report form. The study was experimental in the sense that it pragmatically combined different methods in order to answer the research questions, based more on availability than precedent in any given theoretical framework. While much of existing research in BOAP and related multi-site research programs relies on ethnography and other forms of qualitative research, alongside such methods, this study initially used big qualitative (Brower et al., 2019) methods, namely the analysis of advice websites and a collaborative report form (see Sec.4.3). The data obtained in this study is, apart from documents about the design and policy underlying the EUSS project, first-person and third-person descriptions of interactions with the EUSS and work with individuals applying for or going through immigration checks with the EUSS. In particular, it focuses on observing the points at which people access support when something goes wrong.

As I discuss in Section 4.3, data from advice forums and report forms answers are excluded from the study due to ethical concerns. Only interview data is presented, meaning the results chapters of the thesis present only a fraction of the work done. Despite this, this section presents the initial methodology of the study in order to document the work done during the 3+ years of the thesis. I hope that despite these issues, this methodological reflection can inspire other STS research on border control.

The rest of the section first explains how I was influenced by the BOAP and related frameworks, then the specific methods that were employed, how they sought to address the research questions, the choices that were made, the benefits of them, the limitations of them, and ethical concerns. I also discuss the various things that happened over the period of research that impacted the methodology, including new opportunities and constraints.

3.1 Methodological Framework: A Multi-Site Study of Migration Control IT Implementation

In this section, I briefly describe the overall methodological framework of the study and how it was influenced by the literature described above in attempting to answer my research questions. Theoretically, the methodology of this study begins with the idea that migration control IT should be studied from the points of contact between migrants and IT systems rather than studying migration control as an activity done by states (see Ch.2). As highlighted in the literature at the intersection of STS and critical border studies, these points of contact are often mediated – by other IT systems or by intermediaries such as support groups or ground-level bureaucrats – and can tell researchers both about how border control IT systems and infrastructure develop and about the needs of their users. This is in contrast to the state-focused approaches of political science discussed in Ch.2. The idea behind the study’s methodology is to use intermediation as an entry into both system implementation and impacts. Based on the literature review, I understood both status holders and status checkers as facing disruption from the introduction of a new system, and I was motivated to understand how these different people managed this disruption: the problems it created for them and the ways they responded.

This study initially used a multi-method research design to study the EUSS and obtain a big qualitative record of interaction with the EUSS, focused on how people interacted with the EUSS during status checks and then responded to issues they encountered. This methodology responded to the same problems of distributed IT that BOAP does but used different methods to programmatically address these problems in researching the EUSS.²⁴ The interest was in understanding the point of interaction between the

²⁴ In contrast to much work employing the BOAP or related methodologies, I do not include research with developers or government officials. This is for a variety of reasons. At the start of the study, I intended to conduct interviews with government officials and employees at the companies developing the scheme. To do so, first I found the names of the companies contracted to develop the EUSS by reading industry magazines and speaking with civil society organizations, and put them in a spreadsheet. I then used the company websites and LinkedIn to collect contacts of people who I thought may have been involved in the development or know others who might have been. I then began a process of cold calling and emailing, with no success. After this, I spoke with contacts in civil society, and began setting up interviews with people in government who had worked on the EUSS. However, by this time, I had already gotten so much access to civil society that, after discussions with my supervisors, I was encouraged to focus solely on civil society and users, and dropped my efforts to conduct interviews with government officials and developers. This decision was vindicated by the sheer amount of data I was able to collect from users and intermediaries, and the fact that other researchers have continued to focus single-mindedly on government and developers, neglecting inquiries into the implementation of the scheme. However, this had significant implications for the thesis, including leading to 1) a sole focus on the activities of non-state actors and b) very little information on the ways developers and government officials were responding to the activities of users and intermediaries. It is

applicant or status holder and the EUSS, how people used the EUSS on a daily basis, and what technologies and people were involved in this interaction. Collecting a large number of complaints could help to understand the various ways in which people went through and coped with the EUSS.

3.2 Intermediary Interviews

In this section, I describe my study's use of interviews with intermediaries. Thirty-three interviews were conducted with members of civil society groups and with employers in order to get a sense of what they were doing to support people and with what problems. Thirty-one of these interviews were with members of third-sector organizations, and two others were with HR professionals. The names of these organizations and individuals are not provided in order to preserve their confidentiality, but they were all people who routinely interacted with the EUSS in the context of either status checks or applications.

My approach to interviewing such individuals followed the tradition of interviewing intermediaries within IS to understand their role in innovation and the adoption of new technologies (Vidmar, 2020). For this reason, I adopted a pragmatist framework, as is common in IS research (Goldkuhl, 2012), seeking to show how intermediaries understood the EUSS and responded to it and the social contexts of their actions. Together with the theoretical interest of STS researchers in the contribution of intermediaries to the adoption of new technologies, pragmatism framed my interest not merely in how people *understood* the EUSS (as has been discussed elsewhere, see Ch.2) but rather in how they concretely *acted in response* to it. As I will mention below, this interest also informs how I approached interviews with applicants and status – and initially social media data – and examined how people responded to the EUSS and coped with the challenges it presented.

At the start of the study, a scoping exercise was conducted to identify civil society organizations, and emails were sent to invite people to interviews. Additionally, snowball sampling (Parker et al., 2019) was used, asking the interviewees if they knew anyone who does work related to the EUSS and might be willing to speak with me. This allowed me to work through a network of people working on the EUSS and find people whom I might not have expected to have been relevant to the implementation of the EUSS (see the concept of invisible work (Star and Strauss, 1999)), alongside understanding how people worked together as a network of intermediaries, shared information, collaborated, and so forth (Handcock and Gile, 2011). My motivation for using this method was to increase the accessibility and response rates of potential interviewees since I could have someone else vouch for me and also discover potential interviewees I would not have initially considered. However, this snowball sampling method had the downside of not necessarily offering a representative sample.

Interviews were semi-structured, and the interview guide I used included the following questions, tailored in advance and during the interview to the specific interviewee.

my hope that future researchers are able to continue forward the work done in this thesis, looking at the activities of developers and government officials, especially in order to understand their modifications of the scheme and responses to information about how users and intermediaries were engaging with the scheme. While my thesis ended up focusing on users and intermediaries, research with developers would help to expand and enrich this and other studies' characterizations of the EUSS, most critically by providing an account of developers' and government officials' roles in the gradual adoption and evolution of the scheme.

Could you please introduce yourself and what you're working on related to the EUSS?

What are the specific kinds of things that you see people struggling with?

What kinds of things do you do in your work on the EUSS?

What are your interactions like with applicants and status holders?

Are there any other people or groups you've interacted with in your work?

Table 3. Interview Guide for Intermediaries.

In these questions, as stated above, the interest was in identifying people's activities related to the EUSS, and also how they interacted with status holders and applicants, the government, status checkers, and other intermediaries (something informed by literature on intermediaries discussed in Ch.2 and later in Ch.5). Written or oral informed consent was obtained from all interviewees, and names and identifying information are changed or removed when referring to interviewees.

3.2.1 Data Analysis

In this section, I discuss how I analyzed data from interviews with intermediaries. . Following the qualitative and interpretive approach described in Sec.3, and with the evolution of the project into a qualitative IS study of the EUSS, I conducted a qualitative content analysis of the interviews. This was done using a combination of the qualitative data analysis software NVIVO and Microsoft Excel. I first developed the following themes based on the theoretical interests developed in the STS literature and my focus on action drawn from pragmatism, which correspond to the empirical chapters of the thesis: 1) the problems people had, 2) how they used it – in a prescribed or non-prescribed manner – and 3) who all they interacted with in order to do so. I then coded interviews according to these themes, and created inductive sub-themes. In doing so, I took an iterative approach, repeatedly revising the themes as I spent time with the data (see Mayring, 2000). The goal of analyzing these interviews was to understand the ways in which people interacted with the EUSS and EUSS users, providing support and helping people navigate problems. I also focused on who intermediaries were interacting with in terms of other organizations. Among the sub-themes I developed were how support was practically offered, common problems encountered, why support was needed, relationships with other organizations, relationships with the government, and general reflections on the EUSS. This analysis was the basis on which much of the thesis was written, in particular Ch.5.

3.3 Web Scraping of Complaints about the EUSS

Here, I briefly provide a note about the study's initial inclusion of web scraping. In the original research design, the study included scraping several public forums to understand the problems people expressed online. However, due to the ethical issues around data scraping that came up during the study (in particular, guidance released by the Information Commissioner's Office (2023)), the decision was made to drop this method from the research design.

3.4 Report Form and Civil Society Collaboration

In this section, I describe the study's use of the Digital Status Reporting Tool²⁵ (or Report-It, the report form) in gathering data on the experiences and challenges faced by EUSS applicants and status holders. I also describe the nature and method of my collaboration with the3million, a leading civil society organization advocating for the rights of EU citizens in the UK, which operates the report form. R-I was a report form launched on the internet with the collaboration of the3million. This form asked EUSS applicants and status holders to report any problems they had with the EUSS. Between December 2020 and December 2023, the report form received 1405 reports, and the3million and I conducted 233 interviews with complainants – the specific interview process is discussed below. These reports and interviews were used to trace out the kinds of issues people had with the EUSS, the impacts of these problems on their lives, how they dealt with these problems, and how they first encountered the EUSS. While report forms are a scarcely-used data collection method in the social sciences, and I have found no example of one being used in STS research, Report-It proved a valuable tool in collecting detailed, real-time information about obstacles encountered by EUSS upon the point of them being encountered. The section briefly describes Report-It and its motivations, data collection, data analysis, and ethical issues.

3.3.1 Background to the report form and collaboration with the3million

The report form was the product of a collaboration with the organization the3million. I initially approached the3million in mid-2020 to get their permission and assistance for scraping a Facebook group they operated. Over the following several months (August – December), I volunteered with the group's Young Europeans Network (YEN) and was through this introduced to the Denied My Backup (DMB) campaign, which was working to push the government to provide EU citizens with a “physical proof of status.” In this context (see also Ch.2), physical proof of status meant a document that one could hold in one's hand. In conversations with members of the3million over the course of our collaborations, this was variously described as, potentially being a biometric residence card(BRC) as used by other visa routes, a stamp in a passport, or a piece of paper with a QR code as outlined by in a proposal for the Home Office. I met on a weekly basis with members of the3million who were working on the report form. These meetings would consist of an overall discussion of the project, a discussion of reports, and a discussion of interviews. These meetings helped guide questions asked to interviewees and helped summaries of interviews guide the policy work of the3million members. These meetings were, as I became less involved with YEN (and eventually had to cease my involvement entirely) due to the time constraints of my PhD, the main access I had to the3million, and offered insights into how the3million saw the EUSS. However, the content of these meetings was not systematically recorded (beyond scattered notes used to help me explore the EUSS from a policy perspective) and is not used as data for this thesis.

The report form consisted of a number of questions that people could answer to report their problems to the3million, allowing a real-time stream of concerning encounters with the EUSS to be obtained as the EUSS was rolled out. This collaboration resulted in 1405 responses to a report form and 230 interviews with individuals who filled out the form (three interviews with the reporter and a family member were also conducted). These interviews were able to elucidate how people who were using the EUSS actually

²⁵ For the most up-to-date link to the form, see the3million's website: <https://the3million.org.uk/report-it>. Link last opened January 6th, 2024.

dealt with it, understood it, and worked out everyday problems, providing an unprecedentedly large and detailed qualitative data source about the day-to-day reality of the project.

The choice of collaborating with the3million was made for the following reasons. First, I wanted to obtain a large number of stories of people using the EUSS, and decided based on recommendations from my supervisors to try snowballing from a third-sector group. Given the3million’s prominence online – especially given that this was in 2020/2021, during the pandemic – I decided to reach out to them. Getting involved with the Report-It project was pragmatic as opposed to something that was planned at the start of the PhD, realizing that they were undertaking such a project and that I could involve myself with it in order to collect data while also contributing my research time in my doctorate to assist a group fighting for the rights of EUSS applicants and status holders.

3.3.2 R-I Data Collection

In this section, I describe data collection within the report form project. With the3million, in December 2020, I organized the launch of the report form with which people could share issues they had with the EUSS. Respondents were asked to share basic demographic details, details of their problem, and details of its impact on them. Questions were initially written by the3million and then modified with some feedback from me. They were then routinely modified over time and in conversation with the3million, based on their and my research needs and with the influence of other researchers in the organization. For instance, in 2021, the3million added questions to empirically test Jablonowski and Pinkowska’s (2021) vulnerability framework. Eventually, both an application and a use form were created.

A summary of the questions, both for problems proving status and one for problems applying, is included here. Respondents could choose to fill out either a report for problems applying or problems proving status (hence the two columns). All respondents were asked to fill out demographic information at the end (hence the one column), although this was optional. Note that this version is unlikely to be the most up to date, include all questions currently on the report form, or be the version filled out by all individuals whose responses are referred to in this thesis, given that the questions were changed over time to reflect my and the3million’s changing interests in the operation of the project and new areas of concern. The goal of providing this table is to give the reader a general idea of what was included in the form. For the most up-to-date version of the report form, please visit the3million’s website.

Questions asked to people having trouble proving their status:	Questions asked to people applying for status:
<p>Which of the following best describes your situation? Options:</p> <ul style="list-style-type: none"> ● I am reporting about my own problem with digital status ● I am reporting on behalf of someone else ● I am an employer, landlord or other service provider and had a problem checking someone else’s digital status 	<p>Which of the following best describes your problem?</p> <ul style="list-style-type: none"> ● Technical issues with the application ● Difficulty understanding what is required to complete the application ● Difficulties collecting residence evidence ● Difficulties collecting family relationship evidence

<p>What problems have you had with your status? Please select all that apply:</p> <ul style="list-style-type: none"> ● Viewing or checking status ● Updating status ● Proving status to someone <p>Have you experienced problems in any of the following areas? Please select all that apply. Options</p> <ul style="list-style-type: none"> ● Banking and loans ● Benefits and social security ● Housing or homelessness assistance ● Buying or renting a home ● Job applications and working ● Healthcare and NHS ● School, college or university ● Student finance ● Check-in or boarding for travel to the UK ● Entry at UK border ● Use of Gov.UK websites <p>Please describe your problem. Include as much context as possible. If the problem occurred online, please copy and paste the relevant website link if you can. If you experienced more than one problem, include details of these additional problems here.</p> <p>What impact did this have on you? Did the problem in using your immigration status result in any negative consequences? For example, did you lose out on a job or a bank loan? Did you struggle to rent a property? Did you have a problem accessing health care? How did the experience make you feel? Did the problem impact your family members? Did the problem in using your immigration status result in any negative consequences? For example, did you lose out on a job or a bank loan? Did you struggle to rent a property? Did you have a problem accessing</p>	<ul style="list-style-type: none"> ● Difficulties relating to a criminal conviction ● Difficulties getting a biometrics appointment ● Application has taken a long time to process ● Other <p>Please describe your problem Include as much context as possible. If the problem occurred online, please copy and paste the relevant website link if you can. You will have an opportunity to attach up to 5 screenshots or documents later on.</p> <p>What impact is this having on you? Did the problem in applying for your status result in any negative consequences? For example, did you lose out on a job or a bank loan? Did it cause travel problems? Did you struggle to rent a property? Did you have a problem accessing health care? How did the experience make you feel?</p> <p>Upload screenshots or documents Optional - please upload any screenshots or documents to back up your description if possible. If you do, please hide any personal information from the pictures or documents. You can add up to 5 files. Choose a file</p> <p>Which of the following best describes your eligibility for the EU Settlement Scheme? There are different ways in which people can be eligible to apply for EUSS status.</p> <ul style="list-style-type: none"> ● Lived in the UK before 31 December 2020 ● Not lived in the UK before 31 December 2020, but family member of an EU citizen with EUSS status ● Not lived in the UK before 31 December 2020, but family member of a British
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<p>health care? How did the experience make you feel? Did the problem impact your family members?</p> <p>When did the problem happen? If you can't remember exactly, enter an approximate date. If the problem is ongoing, please enter today's date. If you don't know, you can ignore this question.</p> <p>Upload screenshots or documents Optional - please upload any screenshots or documents to back up your description if possible. If you get any errors when using your digital status, it would be really helpful for us if you could upload a screenshot.</p> <p>If you have tried to generate a share code to prove your right to work, which website(s) have you used? If you know which website(s) you tried to use, it may help us to understand your situation better. You can skip the question if you don't know.</p> <p>If you have tried to generate a share code to prove your right to rent, which website(s) have you used? If you know which website(s) you tried to use, it may help us to understand your situation better. You can skip the question if you don't know.</p> <p>1k. If you have tried to generate a share code for something different than proving a right to work or right to rent, which website(s) have you used? If you know which website(s) you tried to use, it may help us to understand your situation better. You can skip the question if you don't know.</p> <p>Are you able to generate a share code?</p>	<p>citizen who lived in the EU before 31 December 2020</p> <ul style="list-style-type: none"> • Other <p>Where did you start your application process from? There are different rules depending on whether you are applying from inside or outside the UK, and whether you are applying as a family member. Some family members who apply from outside the UK have to apply for an EUSS Family Permit first, before traveling to the UK and going on to apply for EUSS status. Others can apply directly for EUSS status from outside the UK.</p> <p>See https://www.gov.uk/family-permit.</p> <ul style="list-style-type: none"> • UK • Outside the UK <p>Which of the following best describes the stage of your EUSS Family Permit application, if applicable? This question will ask you about EUSS Family Permits. Not everyone who is outside the UK needs to apply for one. See https://www.gov.uk/family-permit.</p> <ul style="list-style-type: none"> • Not applicable - no need to apply for an EUSS Family Permit • Started an EUSS Family Permit application, but not yet completed the process (for example, because struggling to get the evidence together) • Submitted EUSS Family Permit application but waiting for a biometrics appointment at a Visa Application Centre • Submitted biometrics for an EUSS Family Permit and waiting for a decision • Issued with an EUSS Family Permit • Refused an EUSS Family Permit, waiting for an outcome of an appeal or
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If you are currently unable to generate a share code, we would like to ask you just a few more questions.

Do you have physical proof of your UK status? For example, you might have a biometric residence card, a biometric residence permit, or a frontier worker permit. Or you might have a stamp or sticker in your passport. If you don't yet have an immigration status, please answer No.

Please tell us what physical document(s) you have. For example, biometric residence card, biometric residence permit, frontier worker permit, stamp or sticker in your passport.

Would the situation(s) you described have been improved if you could have proved your status differently? For example, you don't have physical proof and you feel that having it would have helped. Or perhaps you have a physical document but it was not accepted and you wish you could have proved your status digitally.

Were you aware of the helplines available through the EU Settlement Resolution Centre or the UK Visas & Immigration Contact Centre?

administrative review, and/or submitted a new EUSS Family Permit application

- Refused an EUSS Family Permit and not sure there are any further options
- Other

Which of the following best describes the stage of your most recent application for (pre-)settled status?

Some of these questions mention biometrics appointments - these are not applicable to everyone. For example, if you are able to apply with an app which scans your identity document and uploads a photo and scan of your face, then this doesn't apply to you. Your application should make clear whether you need to attend a separate biometrics enrollment appointment.

- Not yet able to start an EUSS application (for example because still waiting for an EUSS Family Permit)
- Not yet started an EUSS application (for example because only recently been issued with an EUSS Family Permit)
- Started an EUSS application but not yet completed the process (for example, because struggling to get the evidence together)
- Submitted an application for EUSS status but waiting for a biometrics appointment
- Attended biometrics enrolment appointment for EUSS status and waiting for a decision
- Submitted an application for EUSS status (no separate biometrics appointment was needed) and waiting for a decision
- Submitted an application for EUSS settled status (already granted pre-settled status)
- Granted pre-settled status but unhappy with that decision because entitled to settled status
- Granted pre-settled status

- Granted settled status
- Refused EUSS status, waiting for an outcome of an appeal or administrative review, and/or submitted a new EUSS application
- Refused EUSS status and not sure there are any further options
- Other

Questions asked to respondents of both forms:

Which of the following citizenships apply to you? Please tick all that apply. We use EU-citizen to also include EEA/EFTA and Swiss citizens. We use non-EU citizen to mean someone who is not an EU, EEA/EFTA or Swiss citizen, and also not a British citizen.

What nationalities do you have? Please list them all.

What is your ethnic group? Choose one option that best describes your ethnic group or background.

Did you first arrive in the UK before or after 1st January 2021? We ask because for some people, different rights apply to those who were in the UK before the end of the Brexit transition period.

How long have you lived in the UK?

How did you learn that you needed to apply for the EU Settlement Scheme?

How old are you?

What is your gender?

Do you consider yourself to have a disability?

Email address

Would you be willing to talk about your experience with a member of the3million? This can be helpful for our advocacy work. If you answer yes, we may contact you to arrange a Zoom or telephone conversation (please make sure you enter either an email address or a telephone number).

Would you be happy to share your experiences with the media, if the opportunity comes up? We cannot guarantee your story will be covered by a journalist. There can be cases where stories are covered anonymously.

First name and last name

Telephone number

What is your postcode?

Who is your MP?

Table 4. Questions from The3million's Report Form.

This tool was distributed by the3million on social media platforms, newsletters, and via other organizations. This allowed the3million, which already had a network of stakeholders and partners, to utilize this network for data collection – in turn, I, as an academic, could rely on this network and my involvement in it to learn about the EUSS. However, this opens questions about what kind of sampling this was. It was certainly a kind of convenience sampling and also might be called snowball sampling, but overall, we did not adopt a spelled-out approach to sampling since our goal was not to produce a statistically representative sample of EUSS users or obtain theoretical saturation by any given measure. We rather wanted to scope out problems happening with the EUSS as they happened and obtain detailed descriptions of how the EUSS worked when being used.

All respondents were invited for an interview, and 233 such interviews were conducted between January 2021 and August 2022, when I stopped data collection. However, the report form is still live and being run by the3million, with more detailed and up-to-date analysis available on their website. Interviews were usually between 30 and 120 minutes in length and were conducted via Zoom due to the Covid-19 pandemic and the spread-out nature of the EU population in the UK. Interviews asked respondents for detailed descriptions of how they went through applying for the EUSS and using it for status checks and who they contacted for information and support. Interviews were primarily conducted by me during the early phase of the project, with the3million gradually taking them over until the Autumn of 2022 when I ceased conducting interviews to focus on data analysis and writing.

Interview questions followed from three sets of concerns: 1) a desire to get more detail about the problems described in the form, 2) my theoretical interest in the sites at which people encountered the EUSS and how they got information and support about it, and 3) the3million's theoretical and practical interest in the presence of discrimination in the EUSS. Questions were occasionally changed in response to interest in certain issues, such as the introduction of questions about the EUSS Helpline.

At times, interviews had mixed goals on behalf of interviewees, who sometimes saw them as ways of sharing their experiences with the EUSS, but other times saw them as ways of getting support, voicing grievances to someone, or even learning more about the EUSS. Recognizing these mixed goals, all interviewees whose interviews are referenced in this thesis provided informed consent, either written or verbal, for their data to be used by myself and the3million. Efforts were made as much as possible to be transparent about our use of their data. Additionally, all interviews were referred to anonymously, and all identifying information and specifics of interviewees' situations have been selectively modified to prevent association of any quote with a specific interviewee.

3.3.3 R-I Data Analysis

In this section, I discuss how data from the report form was analyzed as part of my doctoral research. Following the qualitative and interpretive approach described in Sec.4.1, and with the evolution of the project into a qualitative IS study of the EUSS, I conducted a qualitative content analysis of the interviews and text responses from the report form (Schreier, 2019). This was done using the qualitative data analysis software NVIVO and Microsoft Excel to organize categorized material. I first developed the following themes based on the theoretical interests developed in the STS literature and my focus on action drawn from pragmatism, which correspond to the empirical chapters of the thesis: 1) the problems people had, 2) how they used it – in a prescribed or non-prescribed manner – and 3) who all they interacted with in order to do so. I then coded interviews according to them and created inductive sub-themes. Following Mayring (2000), I followed an interactive approach to revising these themes as I went back and forth between them and the interviews. The goal of analyzing these interviews was to understand the ways in which people interacted with the EUSS, focusing on the problems they had, what they responded to, and how these problems were addressed. These sub-themes included the adjustments and workarounds people undertook in response to problems, problems specific to certain contexts (e.g., airports, housing, and employment), problems that seem to come down strictly to technical failures (such as share codes not returning records), interviewees' experiences of getting support, interviewees' experiences of discrimination, misunderstandings of the EUSS, interactions with civil society groups, and statements reflecting generally on the EUSS and Brexit. These sub-themes informed the framing of my empirical chapters and were the basis on which I selected the material to discuss.

4. Limitations

In this section, I describe the limitations of the study. These are as follows: 1) the lack of transparency of the EUSS project led to a limit to what I could say with respect to its technical setup, 2) there was a self-reporting bias to interviewees since I only collected data from those people who actively sought to provide it, and partly because of this, 3) I lack the ability to make generalizations to all EUSS users or meaningful comparisons between different groups.

The first limitation of this study has to do with not getting access to interview developers or study their internal documents and the lack of transparency in the project. This limits what I can say regarding the EUSS' technical setup. Additionally, since I did not speak with developers and the project's focus is on implementation, I am unable to speak to the motivations behind the project and how it was thought about by the government and developers beyond what is readable in publicly available documents.

Second, as noted above, there is a bias both in the demographics of interviewees and the kinds of situations they were in. As mentioned above, the study relied – both when it was using internet data and, in the form, currently being presented – on collecting data from points of interaction between users, intermediaries, and the EUSS. This method meant that the study focused on collecting data from people who were able to get support and missed people who were not engaged with support networks or who were isolated in general. This biased the findings significantly, and the people whose experiences I am able to write about may be relatively well-off compared to those whose experiences I cannot describe. The result of this is that I also do not have a representative sample of EUSS applicants and status holders, and the interviews I conducted overrepresent certain nationalities and socioeconomic groups. The implication of this is that the study is limited to making claims about how a certain population used the EUSS and is not meant to be a generalization about all users.

Furthermore, there is a bias in terms of the demographics of my sample. Demographic information was collected about interviewees both during interviews and on the report form. The demographic information collected on the report form was citizenship, gender, and age. The demographic information collected from intermediary interviewees was restricted to citizenship. Professional and educational backgrounds were occasionally discussed in the context of support activities (i.e., discussed in the context of how the interviewee ended up supporting EUSS applicants). However, they were not recorded systematically, as the focus was on their practices of supporting EUSS applicants and status holders. Speaking of users, interviewees in this study tended to be slightly older, with more than 70% above the age of 30. They tended to have passports from Western European countries, with French and German passport holders accounting for nearly 25% of recorded nationalities. Additionally, most users interviewed in the study (65%) were women. The following figure lists the top five nationalities of participants in user interviews.

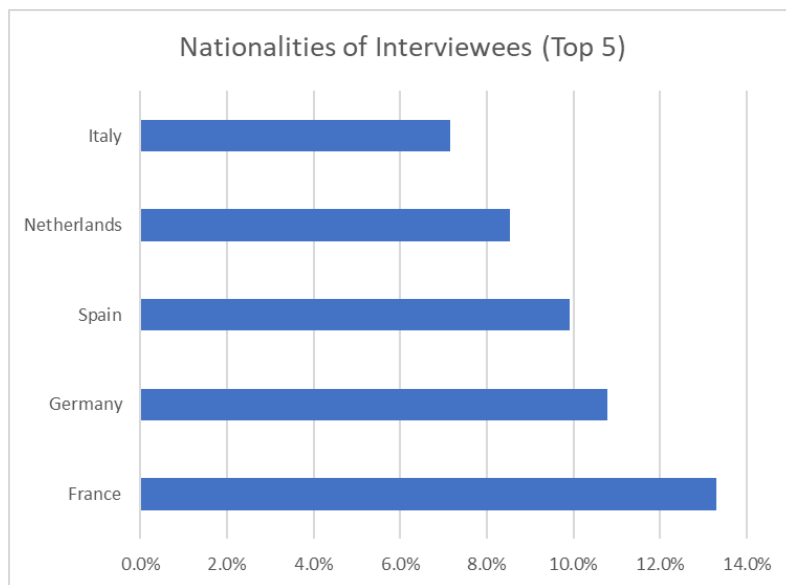


Figure 8. *The Citizenships of Users Interviewed in the Study.*

Therefore, besides the bias mentioned above toward EUSS applicants and status holders who could access support, the thesis is biased toward certain nationalities. This means the thesis provides findings mainly about the experiences of people with the time and networks to access support, along with people from wealthier Western European countries. While the thesis still holds value for explaining the presence of workarounds, intermediary groups, and difficulties aligning the EUSS with existing practices and IT, as a result of this limited sample, it does not presume to speak to the experiences of all users. In responding to this limitation, further research is thus essential to see to what extent its findings accurately describe the experience of all groups with the EUSS. For instance, the next step, building upon this thesis, would be to examine how, if at all, the employment of workarounds differs between different groups. Such efforts would be necessary since the thesis merely attempted to highlight areas of concern, not to make claims about their prevalence or distribution across the population.

5. Conclusion

This section briefly provides a conclusion for Ch.3. This chapter presents the methodology used in this research. The research approach is grounded in discussions of multi-methods research on distributed information infrastructures and seeks to apply the methodological approach to studying migration control IT implementation. By doing so, it sought to provide a case study of how such methodological approaches can be applied in new domains. The data collection was carried out over a two-year period, from 2021 to 2023, during the early implementation phase of the EUSS.

The methodology was based on a multi-methods approach to investigate the problems people encountered with the EUSS and how the EUSS operated at different sites of use – e.g., employment, renting, taxation and welfare, and the border. The data collection methods included interviews, an online survey/report form, text scraping, and analysis of policy documents, as described in Table 6. The remaining methods (not abandoned), addressed all of the research questions, in particular by obtaining rich details about what it was like to use the EUSS on a daily basis. In the following chapters, I will present partial results from the study, focusing on the problems people encountered (Ch.4), the role of intermediaries (Ch.5), and workarounds (Ch.6).

Research questions addressed	Method	Data collection method	Type of data	Data analysis method	Challenges
All	Civil society Interviews	Online interviews	Transcripts	Content analysis	Access
All	T3m Report Form + Interviews	Report form + Interviews	Form responses + Interview transcripts	Content analysis	Representativeness

NA	Forums (Abandoned)	Data scraping	Text complaints about the EUSS.	Topic modeling content analysis	Representativeness, legal and ethical concerns
NA	Policy docs (Abandoned)	Structured searches using Google	Documents	Content analysis	Limited picture of how the EUSS worked in practice

Table 5. Methods Used in the Study.

Chapter 4. Problems with the EUSS:

Highlighting the Problems Arising from the EUSS' Integration with Other Systems and Practices

Summary

In this chapter, I explore the problems people had with applications to and use of the EU Settlement Scheme (EUSS). This question has been asked before in policy and legal literature, particularly in discussions of the digital status (the3million, 2021), but not yet by Information Systems (IS) and Science and Technology Studies (STS) researchers. STS and IS researchers should be interested in the EUSS due to its relative novelty in immigration control and the impact it is set to have on EU citizens and others covered by Freedom of Movement (FoM) rights living in the UK. This chapter argues that STS and IS' theoretical framing can help to understand how the EUSS, alongside its technical and policy failings, was beset with problems because of its interaction with other administrative systems in government and the private sector.

Looking at border control from a systems perspective described in Ch.2, one is prompted to look primarily at the design choices and activities of the Home Office and their principal contractors. In particular, existing research on the EUSS (see Ch.2) tends to suggest that the EUSS' online approach to immigration checks (authorization to access employment, renting, banking, etc.) will disadvantage holders of status under the EUSS over those holding status under other UK immigration statuses that grant a physical document (Jablonowski and Pinkowska, 2021; Tomlinson, Maxwell and Welsh, 2022), or that the automated approach to checking records will disadvantage certain applicants who will need to provide evidence to the government of their residence, rather than being able to rely on the automated process (Booth, 2019). These existing accounts of the project often identify design choices in the EUSS itself (e.g., the lack of physical proof, the deadline, and the records matching algorithm), as opposed to its wider linkages with other IT systems across government and the private sector, as the focus of concern for critics. Similarly, it is the poor or ill-intended design and policy choices of the Home Office, rather than their ability to coordinate the practices of users (including applicants, status holders, border guards, landlords, and business people), that are identified as the source of harm.

In contrast, recent scholarship in STS and IS has produced a more expansive view of the impacts of IT systems, tracing their gradual integration with the wider range of systems in a given field (Monteiro et al., 2013) and coining the idea of the design fallacy (Stewart and Williams, 2005) to argue that the IT systems' success or failure should not be attributed solely to the actions of designers but to the interaction of a wider group of stakeholders, including intermediaries and users. This concept further helps to articulate how the EUSS might be considered not merely as a stand-alone immigration system intended to grant an immigration status or as a simple story of poor or malicious policymaking by the government but rather as something that also causes problems for people due to how it taken up by status checkers and integrated into their existing practices and systems. Scholars in STS and IS have shown how systems can become interlinked with others, forming systems of systems or infrastructures that cover wide areas of

application and diverse social contexts and evolve over time in their use. In contrast to a systems perspective, adopting the infrastructures perspective reveals how it plugs into other IT systems and practices (e.g., how authorization is done in other agencies like the border force, corporations, and universities). No other scholars have yet to take an STS or IS approach to the EUSS and study how it connects to wider infrastructures for checking statuses, which is the main contribution of this chapter.

Based on interviews with EUSS applications and status holders and by applying the theoretical frameworks of IS and STS research, this chapter expands upon these ideas in the existing literature and examines the problems people had with the EUSS. While the dominant story of the EUSS among academics (in particular within migration studies and public law) and activists is a simple one of technical failure, I argue that even in many of the cases that are marked by significant technical failures, the EUSS also caused problems due to unresolved issues in how it interacted with existing practices of status checks or the assumptions of status checkers.

In describing these problems in the process of social learning, I look at two categories of problems and show how they are interconnected: 1) problems of policy and design internal to the EUSS, and 2) problems of how the EUSS aligned with other processes in government and the private sector, the latter of which includes administrative burden, or problems getting devolved immigration controllers to properly use the EUSS and align it with their systems and work processes. We see in this chapter how problems arose from the wider process of social learning with the EUSS rather than simply technical failure or individual vulnerability. This section examines how people navigated proving their status under the EUSS and, in particular, how people articulated what led to problems. In Sec.1, I revisit the theory and methods that inform this chapter. In Sec.3, I explore problems with the EUSS that seem to be well described by the design criticism focus of existing literature. In Sec.4, I explore problems that seem to be better suited to be described by the STS approach described above. Overall, the chapter shows that there is too much focus on the Home Office in ways that ought to be complemented with an exploration of the activities of other actors and treatment of the EUSS as part of a network of networks of other actors and IT systems. By shifting the focus to the interaction between different groups and systems (and in the next chapter, how people got support and navigated immigration checks), I argue that one cannot fix the problems of the EUSS with a perfect interface because there are still the issues with implementation and the disjointed practices and IT systems of users. While the focus of existing research on technical aspects of the EUSS is important and a necessary step to checking the decisions of the government, this can be complemented with a broader sociotechnical view of implementation.

- The chapter identifies the role of problems related to how the EUSS aligned with other processes in government and the private sector.
- Understanding these interactions between a border control IT project and other IT systems and practices is essential to help critique such projects.
- This discussion of problems helps to understand the ways people coped with the EUSS, which are addressed in Ch.7 and Ch.8.

Table 6. Key Takeaways from Chapter 4.

1. Theory: Integration of Government Systems

In this section, I look at the phenomenon of joined-up digital government services as a way of helping to understand the implementation and adoption (see Ch.2) of the EUSS. This is done in order to introduce background knowledge of the EUSS and literature on government services, which have helped me contextualize my findings. A discussion of my findings in light of this background, integrating this theoretical discussion with my empirical material, is presented in Sec.4. Since the goal of the thesis is to understand how the EUSS worked on a day-to-day basis, this chapter describes some problems people had with it. In Sec.3, I present that in addition to the many problems arising from technical errors with the EUSS (such as share codes not working), the EUSS created a wide range of problems due to the way it interacts with the installed base of IT systems and practices. To provide a background to such issues, this section will first provide a short overview of the STS literature on social learning (covered more extensively in Ch.2) and then briefly review the phenomenon of joined-up and interoperable digital government and its relevance to the EUSS.

Social learning refers to the process of how technology is changed and adapted as it is integrated into use contexts. This concept was developed as a challenge to oversimplified views of technology design which posited a great degree of control and invariability in technological artifacts. Researchers have studied the intricate, negotiated, and sometimes contentious processes that transform the environment, tools, and work practices once an artifact or system begins being used (Savolainen, Kaisa, and Hyysalo, 2021; Stewart and Hyysalo, 2008). STS researchers highlight how the political implications of technologies do not solely arise from the internal workings of development teams but also stem from the more extensive processes of adoption. They are likely to have diverse impacts, encompass multiple policy objectives, involve various non-state actors, and take shape across different moments and locations (including their actual use) As a result, this concept has significant implications for the study of border control and has been taken up – explicitly or implicitly – by a range of studies in this area (see in particular Andersson 2016a; Sontowski, 2018; Pelizza, 2021).

In addition to this theoretical discussion of social learning, the findings presented in this chapter can be better understood with a background in integrated e-government. Integrated e-government refers to the practice of using digital technologies to connect different government systems, services, and departments. allowing for supposedly more effective delivery of public services (Fountain, 2001). The goal of integrated e-government is to provide citizens with a seamless and user-friendly experience when accessing government services while also reducing administrative costs and improving the overall quality of service delivery. This approach to government service delivery has gained popularity in recent years, with many governments around the world investing in digital infrastructure to support integrated e-government (Silcock, 2001). However, the success of integrated e-government initiatives is often mixed and relies on a range of factors, including the availability of digital infrastructure, compatibility of new IT with the installed base, the capacity of government agencies to collaborate, and positive responses from the public. For instance, in the UK's case, the attempt to introduce a national ID linking the records of a range of government departments was met with widespread political opposition and was eventually abandoned (The London of Economics and Political Science, 2005).

1.3 Methodology

This chapter is based on a qualitative analysis of interviews, reports, and social media posts. Many of these quotes come from interviews with respondents to the 3million digital status reporting tool. Further publications and advocacy based on this data can be found on the 3million's website: <https://the3million.org.uk/publications>. The initial version of the chapter included social media posts, but these have since been omitted, and the chapter is now exclusively based on interviews with intermediaries and EUSS applicants and status holders. Inductive coding was used to draw out various themes, and using an IS theoretical framework, statements in these themes were examined in greater detail. A qualitative description of these statements is presented, which aims to provide a sense of the problems people had and the social and technical context of them. All quoted statements have been modified to avoid identifying the individual who said them, with demographic details and minor details of the situation occasionally modified.

2. A Typology of Problems

In this section, I divide problems with the EUSS encountered in this study into two categories that I encountered in interviews. In analyzing interview data, I found that some problems were very well explained by the design criticism literature, and others were more understandable when thinking via STS' focus on the interconnection between different systems and work practices.

In the first case, there are problems related wholly or primarily to issues internal to the EUSS project, its policy, and its design. In analyses by legal and policy scholars, the EUSS has widely been found to have a range of adverse effects, particularly upon certain groups of people, resulting from malign or careless design and choices (the3million, 2000; Barnard et al., 2022; Jablonowski and Pinkowska, 2021; Tomlinson, 2019). In particular, existing research tends to find that the EUSS' online approach to immigration checks (e.g., authorization to access employment, renting, and banking) and online approach to applications will disadvantage holders of status under the EUSS over those holding status under other UK immigration statuses (Booth, 2019; Jablonowski and Pinkowska, 2021; Tomlinson, Maxwell and Welsh, 2022). Such problems involve how its technical and policy design impacts and disadvantages users and include, among other issues, the cliff-edge approach of Pre-Settled Status, the lack of a physical document, failures to generate share codes, failures of share codes to return records, and failures of the smartphone application to read chips in passport and take photos (see Table 8). These issues were all identified in the present study. In analyses of these problems, and in line with the statist literature on border security discussed in Ch.2, scholars point to how the EUSS has been designed in a way to privilege security over human rights, and in doing so, they place the state – in this case, the Home Office – as the primary actor with agency over the EUSS and methodology where researchers should look to understand its flaws.

Additionally, my research found a range of problems that have to do with the poor alignment between the EUSS and existing practices and IT of status checkers. These problems can be related to the fact that the EUSS needed to be used for status checks by people with a range of existing practices and IT systems not built for the EUSS' unique method for immigration checks. I argue that these problems can be understood by relying on the STS concepts discussed in Ch.2, and a detailed description of these problems is offered

in Sec.4. While the EUSS has many problems related to poor choices and concerns within government, and these were documented extensively in this study (see Sec.3), the chapter focuses on how the EUSS also caused a range of issues when it ran against existing practices of status checks, the assumptions of status checkers, or adjacent or interlinked systems. The chapter proceeds by examining these problems, followed by a discussion and a table placing problems into the categories described in this section.

3. Technical and Design Problems with the EUSS

In this section, I will very briefly discuss the problems individuals experienced with the EUSS that adhere to those highlighted in the existing literature on the EUSS mentioned in Ch.2. These problems primarily concern the IT and policy aspects of EUSS and might be called design and development issues according to the traditional (non-STS) view of design, which regards it as separate from use and the responsibility of developers. This section will focus on very briefly going through problems that vindicate the existing critical approach outlined in Chapter 2, covering issues like the inability to generate or display immigration status records online due to technical errors. Although these problems are very concerning and caused substantial difficulties for interviewees, they will not be given an extensive discussion, and the chapter focuses mostly on adding to these known problems by discussing external problems – said differently, problems with the integration of the EUSS into wider e-government which are best explained through STS concepts like social learning.

First, there are cases related to share codes in which technical failures appeared to be the primary determiner of failure. These were cases in which V&P failed technically, making people unable to prove their status, even if all parties (the status holder and status checker) knew what to do. This has been extensively highlighted in the literature and was the case for many of my interviewees with the Report Form project. As one interviewee told me, providing share codes to employers worked fine until one day when it failed.

“I tried to log into my account, and a message appeared saying that there is no record of me at all. It's like the information that I entered does not correspond to any records, and it told me that is probably because my application is still being processed. Obviously, that is not the case, so I called the helpline and waited for like 45 minutes, and they took my information and checked for me, and assured me that this was not the case that they did have a record of me in their system and that the problem is that there is a hyphen in my ID number, and that has caused the system to lag there's some sort of bug apparently and therefore that's why I cannot see my immigration status. I asked for it to be fixed I asked how long it would take, but they couldn't tell me how long it would take because this has to do with their IT team” (Interview 160).

In this case, the interviewee reported trying to apply for a job, and when trying to obtain a share code to provide with the application, he could not get one. This resulted from an error within the EUSS records management, although due to the lack of transparency, it is unclear what. It was a typical issue, and the same story was repeated many times by interviewees, who told me that either they (in the case of report form interviewees) or their clients (in the case of civil society or private sector interviewees) had failed to generate a share code at a time when they needed one. As was the case with the interviewee quoted above, this led such individuals to lose job opportunities concretely.

As the case quoted above indicates, more than simply failing to return records, when there were errors generating share codes, V&P tended to return extremely unhelpful and misleading error messages. For instance, when a share code would fail to return records, status holders were often told that their records were not found on the system, even when they had status. The extent to which error messages were so inaccurate and unhelpful regarding the underlying issue is not something highlighted in the literature on the EUSS thus far, but it is incredibly important. It appeared to cause undue stress for the status holder and may have changed the behavior of status checkers - in the direction of thinking that a person may not actually have status and passing them up for job, rental, and educational opportunities as a result -, although I only have indirect evidence of this. As one interviewee told me when her employer tried and failed to check a share code that they had sent her,

“My main worry with this is that clearly, they have my records, and they've issued me that code, but instead of seeing ‘our system doesn't work, try again,’ it gives my employer the impression that as if I've made up a code, I've given a wrong code, I'm trying to use a code that doesn't belong to me, or I don't have the settled status. Yeah, it might just be a simple IT snafu. But it should be reported as such” (Interview 56).

In this case, the interviewee identifies his frustration that the V&P told his potential employer that he probably did not have records in the system or that he had misused it rather than identifying that it was a glitch in the system itself. He expressed that this was an irresponsible design choice with an easy solution. Error messages, he said, should not be written to suggest to status checkers that the provider of a share code might not have status and should instead provide a clearer impression that the system itself has problems. Similarly, another interviewee explained that he was trying to update his passport before applying for a job but encountered a series of confusing errors and instructions from V&P that made it impossible to use:

“It was giving us some sort of strange error messages like the ones I sent you earlier. It kept telling me my birthday was wrong, or my ID number was wrong, or my application hadn't been processed. But all of this was completely untrue. It made no sense whatsoever” (Interview 89).

In this case, the interviewee, in line with the design criticism explored above, describes how the failure in share codes, along with the unhelpful error messages, might lead to discrimination among EU citizens. Such a problem in the internal development of the scheme gave the impression that the immigration status or the status holder's behavior was wrong, not the system. This confirms the arguments made by Tomlinson et al. (2022), who suggest that the EUSS' digital approach to status checking will disadvantage Settled and Pre-Settled Status holders over people with Biometric Residence Permits. These findings also align with the older critical literature in STS, for instance, the work of Latour (1994), Winner (1980), or Akrich (1992), who highlight the political implications of how certain artifacts are designed. While these issues are important, and vital to understanding the harms caused by the EUSS, in the next section, I will show how they sit alongside a range of issues caused by the EUSS' interactions with the rest of British e-government and digital services in the private sector.

4. Implementation Problems with the EUSS

While these issues of the project design and conduct of the government were a large part of the findings from interviews, this section aims to show that they are only part of the story of this project. There are also problems with the EUSS that relate to how the EUSS aligned with other processes in government and the private sector. In interviews, in addition to problems internal to the EUSS' policy and IT, the negative experiences people had were also commonly attributed to failures to integrate the EUSS into the practices of status checkers or applicants. Looking at how problems arose in these cases and were expressed by people highlights that the EUSS failed in many ways because of how it was part of broader e-government. Such framing can tell researchers things about the EUSS that a simple assessment of government and technical failures with this one project does not. In this section, I will look at how these problems played out in a range of venues, including travel and employment.

4.1 Traveling with the EUSS

In this section, I explore issues implementing the EUSS for air travel via the problems people had traveling with the EUSS and issues the EUSS presented when being implemented for use by travelers. As I will show, these issues go beyond simple technical failure in the EUSS (which did indeed happen) to a) problems with how border guards and travelers (mis)understood the EUSS, and b) problems with its disjoint with existing routines and needs of border guards and its lack of integration with existing systems and practices. More simply put, I make a division between cases in which the problem arose from a lack of knowledge and cases in which it arose from a poor alignment between the EUSS and border guards' needs. These issues are discussed sequentially in Sec.4.2.1 and 4.2.2, although there is overlap between them. COVID-19 and how this caused issues for the implementation of the EUSS for travel is also discussed briefly and given a more detailed treatment in Sec.4.4. These issues plagued the EUSS, and travel was one of the issues that appeared to cause interviewees the most stress and confusion. Each of these categories of problems is discussed in this section. These sorts of issues should be distinguished from purely technical issues, and this section shows how they can be better understood by thinking about the way the EUSS needed to be fit into the wider infrastructure of artifacts and practices used to check the immigration statuses of UK-bound travelers.

4.2.1 Misunderstanding the use of the EUSS for travel

Participants described routine requests for proof of status at external ports under the EUSS during the period studied. One interviewee explained that she had been asked for physical proof of status at an airport.

“My husband [British] went through okay, and then he was waiting just after the customs. I had all my paperwork with me, and I showed my passport and vaccination and passenger locator form and everything, and he looked at that and said I need to see your proof of your settled status. And I said well, that kind of paper proof does not exist because that documentation exists only in the Home Office computer. And all the customs officials can access that information from the central computer of the Home Office and say, are there for not providing any ID or document proving it for that reason, and he was like, you are making a problem for me, and it was quite clear from the way he was conducting himself that he was going to be causing problems and he did not want to

let me through because he did not accept this explanation. After this, I took out my phone and threatened to call my embassy, and he let me through” (Interview 156).

In this case, what is notable is that the border official asked for physical proof but does not appear to know what that is. He appeared to be asking for a physical document or ID card of some kind, which was not granted by the EUSS. While the interviewee stressed that this information was accessible on the computer, the border guard seemed not to know this – furthermore, as will be discussed in the next section, the border guard did not seem to have a way of accessing this information. In addition to the lack of knowledge among border guards, I also interviewed a participant who explained that physical proof of his status was asked for not just by a border guard but also by the guard’s manager, who told him specifically that he needed a physical document.

Similarly, I found a case of a husband and wife who frequently traveled to Malawi. At one point they were asked for proof of UK residency in a Malawi airport, and the employees there did not know about the EUSS or online-only proof. The employees ended up just sending the couple along to their connecting flight from another airport in Africa to the UK, presumably expecting that the people at that airport would know how to deal with the issue. Based on their experience traveling, the interviewee who described this situation explained to me that her main concern is that, in smaller airports on connecting flights not going to the UK, people would not accept the EUSS’ digital status as proof of residency. She also worries that in countries where the internet sometimes goes down, she would not be able to check her status online if she needs to. These issues represent a lack of integration of the EUSS with existing systems for checking statuses, which is discussed in the next section.

4.2.2 Lack of Integration Between the EUSS and the Installed Base

In this section, I address the second category of issues encountered by travelers: lack of integration between the EUSS and existing systems and practices for checking the immigration statuses of travelers. This concern was echoed by someone traveling to Chile; he explained that at the check-in desk at the airport in Bolivia, he was asked for physical documentation by the border guard who was particularly insistent that it needed to be on paper. While such cases, like the ones described in the previous section, include a great deal of misinformation among border guards, they also highlight the extent to which the EUSS represented a significant change to the practices and techniques of checking travelers’ identities.

“He told me that I have to demonstrate to him that I live in the UK, and I said, OK, how can I do that? Because there is a web page or something, and he said no, it needs to be something on paper that I can see” (Interview 2).

In this case, the status holder expressed similar concerns to those expressed above, in the sense that the border guard did not know what the EUSS was or what he should be asking for. However, particularly prominent in this case is that the EUSS demonstrated a lack of integration with the practices of border guards. The guard could look someone’s records up on a database and ask for paper documentation, but, based on what interviewees told me, he could not do so for someone with status under the EUSS. The incorrect requests for documentation on behalf of border guards might be interpreted as ad-hoc attempts by border guards to patch up the lack of integration between the EUSS and their existing practices and

technical systems – something also discussed by Pollozek and Passoth (2023) in the case of Frontex (see Ch.2).

Similarly, travel with the EUSS has been widely publicized, including EU citizens and individuals with derivative rights being incorrectly asked for incorrect documents (Fox, 2022), detained and denied entry to the UK. In one case that I documented, the Italian-citizen sister of a Settled Status holder was detained at the border when trying to come to visit since the border guard was under the impression that EU citizens with pending Pre-Settled Status applications were not allowed to enter the UK (Interview 93). This caused significant mental strain on the traveler, who reported being traumatized by the experience. From an STS perspective, this case highlights how information was not effectively flowing from policymakers to border guards, who did not understand how the EUSS worked.

Others report being asked to present proof of their residence in the UK and pulling it up on their phone, still reflecting the fact that border guards wanted to see something in front of them – on a piece of paper or a screen – that could be evidence of travelers’ immigration statuses. Similarly, there were complaints that proof of status (i.e., a BRP or a letter from the Home Office) was asked for as a proxy for proof of residence at external ports when proof of residence was required to enter during the COVID-19 pandemic lockdowns, and travelers I interviewed complained that border guards kept asking them for things that they did not feel they had to show or were not to be used as proof of status using the EUSS. These are misuses of the EUSS addressed in Ch.7; they show how misunderstandings of the EUSS sometimes led to informal workarounds (such as using printed copies of V&P as a pseudo-ID card) since border guards’ lack of understanding often led them to accept the most convenient option or the option that had the least friction with their existing work practices.

4.3 Implementing share codes

In this section, I look at the failure of people to use share codes. Share codes, as discussed in Ch.2, were one of the most distinct and criticized aspects of the EUSS. While Sec.3 described how share codes resulted in a range of technical problems, there are also ways in which they caused problems for people that are better understood following an infrastructure framing of the scheme. This includes the following cases:

1. Cases in which share codes expired
2. Cases in which job applicants did not have a place to put share codes in online applications
3. Cases in which share codes were not recognized as evidence of legal status or residence

These issues are gone through sequentially in the remainder of this section. In general, they can be interpreted as causing issues because a system under the purview of the Home Office was made to interact with and serve the needs of other (government and corporate) bureaucracies, with their different IT systems, practices, routines, and timelines. This is a problem often highlighted in the STS literature on border control – and STS literature in general – with researchers finding that a major challenge of introducing new border control systems is ensuring they align with existing routines of users and can effectively send and receive data from IT systems already in use (Bourne et al., 2015).

4.3.1 Expiry of share codes

The expiry of share codes was a commonly reported issue. This problem is exemplified by one interviewee who, upon turning 70, was asked to reapply for a driver's license. He started filling out a form online after reading that it would be quicker but received an error and had to apply by post. After 90 days, his share code expired, and he expressed that he was worried because the DVLA did not contact him about the expired share code and seemed not to be concerned about the issue.²⁶ Shortly thereafter, the interviewee got a form in the mail asking for more information about medical records, which he filled out and returned by post. He tried several times to contact the DVLA, who eventually said that it would be faster if he tried once more to fill out the form online. Because of the delays and confusion this situation caused, he felt very worried about losing permission to drive because his family members needed him to drive them due to their disabilities.

“I’ve lived in this country all my life... now I’m treated as if all of a sudden, I’m nothing. I’ve faced no serious issues, but all of these small things in the background make life difficult”
(Interview 210).

One might interpret the expiry of share codes as an issue of friction between the established practices of government departments and the technical setup of the EUSS (see Trauttmansdorff and Klimburg-Witjes, 2020). Government departments processed applications - for driver’s licenses, social credit, etc. - with significant backlogs, which is a more general feature of government bureaucracy and the case across government. Since share codes expired after 90 days, and this exceeded the timeframe in which many government departments - e.g., DVLA, DWP, HMRC - were able to process applications, this created a situation in which an element of the EUSS was potentially unproblematic on its own but caused difficulties due to how it interacted with other bureaucratic processes. As one interviewee framed it:

“To apply for the driver’s license, I had to send my passport, and there was a special box for the share code to prove my immigration status in there. So yeah basically, that’s how it worked, and then I sent everything to the DVLA and waited. And, of course, the share code is only valid for 30 days and they took so long that eventually it expired. So, they wrote me to ask for another form where I wrote a new share code. So, I generated another share code, I wrote this on there, and I was really frustrated” (Interview 237).

In this case, the interviewee applied for a driver’s license to the DVLA by mail and, helpfully, found a place to put his share code, identifying a certain degree of integration between the DVLA and the Home Office’s bureaucracies. This story would have probably ended fine had the DVLA not been beset with a backlog of applications they needed to process. In this case, because the DVLA took so long, a potentially otherwise innocuous aspect of the EUSS design became problematic, and the share code expired before it could be used, leading the DVLA to need to write and request another share code. In this case, it led to a prolonged application and a time when the applicant needed to wait without his passport or a driver’s license. Time windows in bureaucratic interaction are fairly normal: you have a window, and then things

²⁶ It should be noted that share codes initially expired after 30 days, but this was extended to 90 days partly due to feedback from the3million. See the3million, 2022, “Letter from Home Office in response to the3million's 'fixing the digital status' proposal”, <https://the3million.org.uk/publication/2022030301>

change; however, as a result of this normal process and the dysfunction within other departments, problems arose.

By thinking of the EUSS through the lens of II research and integration between different parts of e-government, one can see how these interactions, alongside elements strictly belonging to the EUSS, shaped the kinds of difficulties people had. This disjuncture appeared to relate to the lack of joined-up e-government in the project's early days. Other government departments relied on the applicant providing them with access to the EUSS database in the form of a share code rather than having their own ways of checking it. However, this feature was remedied during the course of my study of the EUSS, with departments being given their own ways of checking EUSS records without needing a share code. Ch.6 discusses advances in joining the EUSS to other bureaucratic processes.

4.3.2 The EUSS and HR Systems

Another area of friction between the EUSS and established practices is online application forms for employers, which for a while were often not updated to have a space to write one's proof of immigration status (share code). These are application forms online, which often require applicants to provide proof of immigration status. In the cases I document, this was typically in the form of a PDF file to be uploaded to the online application. One interviewee reported that in a job application, the form only had a place to upload a PDF file, not to type a share code:

“At work, after I applied, I had to submit the form, and the form asked me to submit a copy of this settled status, but it didn't let me type a share code” (Interview 56).

This showed an incompatibility between the EUSS and existing IT systems used by employers to check immigration statuses. These online application forms are widely used in many countries, and in the UK, where immigration control rests on internal right-to-work checks (Sitkin, 2014; Slaven, 2022), employers regularly require proof of applicants' right to work to be submitted with these online applications. A problem is that these forms, with employers operating as devolved immigration controllers, need to ask for the correct kind of right-to-work documentation, which they oftentimes did not.

One interviewee told me that as he was applying for a job at a popular retail chain in Scotland, he was asked to submit proof of his immigration status on his online application. However, when he tried to do so, there was only a place for a PDF file to be uploaded and nowhere for him to type a share code. These cases show that existing bureaucratic processes and IT systems used in the private sector were not equipped to handle this new form of proving status.

Often the job application process showed ignorance about how the scheme was supposed to work. As one member of a civil society group told me, he encountered cases of people applying for jobs, even at large companies, and being asked for documentation that did not exist.

“This one guy came to me and said he applied to get a bank account and said that they asked him to give them his passport, and then complained that there wasn't a stamp or anything in it to prove his Settled Status. The poor guy told me he explained this wasn't a thing that existed, but

the bank told him they couldn't process his application without seeing something physical” (Interview 160).

4.4 The EUSS and COVID-19

In this section, I explore the issues that the EUSS implementation faced when the UK was presented with the COVID-19 pandemic. While many of these issues are addressed above, this section explores COVID-19 in greater detail, arguing that the pandemic showed how the chaotic implementation of the EUSS created problems when faced with an unexpected challenge. The pandemic created many challenges for the EUSS, which I documented in my research. In this section, I focus on one particular problem, namely how people were locked out of the country due to the pandemic. That people would be unable to return to the UK due to the pandemic was not foreseen during the setup of the EUSS. COVID-19 came along, and this introduced a variety of issues that may not have been as much of an issue otherwise, showing the ongoing need to adapt information systems to the reality of their social context.

4.4.1 Absences and eligibility

COVID-19 primarily complicated eligibility for the EUSS. Eligibility for the EUSS is based on continuous residence in the UK. Once this residence is established by someone under FoM rights - i.e., by an EU citizen entering the UK by the end of 2020 - they can apply for Pre-Settled Status. Once they have lived in the UK for five consecutive years - or if they have done so already - they can apply for Settled Status. However, if someone spends too much time outside the UK with Pre-Settled Status, their eligibility for Settled Status can be lost. At the time this study was conducted, this was no more than six months but was extended to twelve months if the applicant could show justification for it (Benn, 2021).

Throughout the study, I found it a common experience for people to return to their country of origin due to the pandemic and subsequently be prevented from returning.

“I went to France to see my brother and sister, and then all of a sudden, the pandemic broke out, and I was stuck here. I couldn't go back. I couldn't travel at all. And I was thinking about going back in a few months' time, like just in case, you know, not to break that continuous residency period. But I couldn't go back due to the restrictions” (Interview 163).

These concerns around ineligibility created a string of changes to the EUSS' eligibility rules, in particular COVID-19 exemptions. For a more detailed explanation of these changes and how they worked legally, see Benn (2021) – for the intents and purposes of this thesis, it is enough to say that granting of status was sensitive to absences forced by the COVID-19 pandemic. These exemptions were introduced in 2021, as far as I was able to tell, to handle the aforementioned issues.

“I understand that if you are absent between 6 and 12 months due to Covid, that does not break your continuous residence. However, even after calling the helpline to get some clarity, they couldn't say when I could leave the UK again. Does the time I was away count like I was in the UK and I can leave the UK now if I want? Or do I need to remain in the UK for the next 6 months to compensate for the time I was away?” (Interview 88).

Others complained that while the COVID-19 guidance on absences was not particularly helpful, it was even worse if you were out of the country for other illnesses. One interviewee explained that he had been outside the country as a caregiver for her sick parents and had exceeded the maximum absence allowed for transition from Pre-Settled to Settled Status. The solicitor he spoke with remarked that it was largely discretionary on behalf of Home Office decision-makers whether to accept such absences. He also complained that he could not find good information on Gov.uk and, despite numerous calls to the Resolution Center and even speaking with a lawyer, was unable to find what kinds of evidence would be accepted as reasons for having been abroad. As he told me,

"So, I have a doctor's certificate to show that I am caring for them and that I need to stay longer than expected. So yeah, I'm planning on sending that in, and hopefully, they'll consider it, but I do not have 100% information that this is something that the Home Office will accept. I spoke with a friend who's a solicitor, and she says they may or may not listen to the case, so I'm really not sure" (Interview 48).

In this case, what is clear is that the COVID-19 pandemic caused a significant challenge for the implementation of the EUSS and meant that many people who might have otherwise had a relatively easy time applying for the scheme became ineligible to do so. Despite the changes to the rules allowing longer absences due to the pandemic and travel restrictions, the government was not effective at communicating these changes or what made someone eligible. Such issues will be discussed in further detail in the next chapter, where I discuss the provision of information and support around the EUSS.

5. Discussion: The EUSS as a Part of E-Government

This section presents a discussion of the findings presented in this chapter. Throughout this chapter, I have shown that some issues with the EUSS can be traced back to shortcomings in both technical aspects and policy, but many other problems arise from the failure to properly integrate the system into existing routines and IT infrastructure. This has resulted in chaos and inconvenience in various areas such as recruitment and travel. In this section, I first describe the implications of findings for how researchers should understand the EUSS. I then hint at how the findings can contribute to the development of the theoretical perspectives at the intersection of STS and critical border, security, and migration studies by stressing the insight that internal border control projects need to be aligned with the installed base of IT and practices for checking statuses. These problems further build on this STS border control literature by highlighting how projects like the EUSS are difficult to understand as ready-made or fixed entities from the get-go and that many issues rather arise due to their interactions with the installed base of IT systems and practices; in the case of the EUSS, I documented cases of problematic interactions between the EUSS and the practices and IT of border guards, employers, and banks.

5.1 What These Findings Say About the EUSS

These findings throw further light on the functioning of the EUSS and should serve as a helpful addition to the legal framing of the EUSS best articulated in the work of scholars like Joe Tomlinson and Kuba Jabłonowski, discussed in C.2. The chapter also addresses how well the EUSS functioned with other IT systems and practices (Hanseth, 2014; Pollozek and Passoth, 2023). The EUSS caused problems both due to a wide range of technical errors internal to the project's IT and also due to its poor integration with

wider UK e-government and HR systems. The EUSS, thus, needs to be understood as part of a range of other practices and e-government systems. People need to make it work, so there is much improvising. As mentioned above, drawing on STS literature, I place the problems I encountered into two categories. First are issues internal to the EUSS' policy and IT. These include failures to generate share codes, failures of share codes to return records, and failures to match applicants' DWP and HMRC records in automatic checks. These are issues already well covered in the literature on EUSS. In my study, I also found that problems with the EUSS also include a second category. These are problems related to the implementation and social learning process of the EUSS (see Ch.2), which here are the integration of the EUSS with the installed base of practices and IT. These include issues around the lack of understanding of how the EUSS worked that was demonstrated by border guards and travelers, and frictions between the EUSS and existing IT systems and work practices used by HR officers. Table 8 lists these problems divided into the two categories. Note that these cases usually involve some amount of both internal decisions and external alignment problems, hence the dotted line between the two categories.

Technical and design choices problems	Implementation problem
Share codes not generating	Not knowing how to use the EUSS (e.g., status checkers asking for incorrect documents)
Share codes not returning records	
ID cards not working to log in V&P	Needing physical documentation for the status check (e.g., needing to upload a PDF file to an HR system, needing to quickly check a physical document at a port of entry)
Wrong ID card number read during the application	
Long waiting times	Issues with online applications
	Long waiting times
	Expiry of share codes
	Issues encountered while traveling

Table 7. Problems with the EUSS.

The issue of expiring share codes was often framed in literature on the EUSS as a poor design choice underlying the EUSS. One way in which this problem was observed to play out is the design not accounting for the alternate timelines of application processing within other government departments. Furthermore, as I will show in Ch.7, many issues that were framed as poor design choices – e.g., some of

the difficulties showing physical documentation at border checks – were made more workable due to fixes on behalf of the government. These fixes demonstrate an interactive, not linear, design process, which supports the framing offered by STS researchers in Ch.2. In this sense, the above categorization should be seen as a theoretical contribution to existing research. As the mantra in STS goes, things could have been otherwise with the EUSS, but that does not only refer to the decisions of developers; it also refers to the integration of the EUSS into administrative practices and systems of government departments, employers, and the lives of status holders (this need was not something that could have been ignored due to the legal power of the government). The EUSS was not successfully integrated into these practices and systems – something that could have been supported or even encouraged by the government, as in frameworks like those advanced by Dix (2007).

It should be noted that this is not an unprecedented part of the EUSS or something that has not been discussed in the literature. On the contrary, in addition to the specific design of the digital status, Tomlinson and Welsh (2020) express worries about longer-term plans for the scheme and how it feeds into the broader development of what has been called the digital border or the broader creation and interlinking of digital infrastructure for digital border checks – in this sense, concerns about the EUSS and its integration with the rest of British e-government and migration control is not particularly new. As they write, the British government has far-reaching plans for the development of digital systems and cross-government information sharing. The EUSS is one example of such a plan, and the way it handles data rests upon information sharing between the Home Office and other departments:

The Government's vision also includes much further development of digital infrastructure than may be apparent on the face of such statements. For instance, for applicants who apply to the EUSS, it is not just that their status, once granted, that will arrive by email and be checked online, the whole process they go through has gone digital. Those who get digital status after applying to the EUSS will have already applied online and been processed through an automated decision-making system that is built on extensive data-sharing arrangements between the Home Office, the Department for Work and Pensions, and HM Revenue & Customs. As part of the digital status element of this infrastructure in particular, the direction of travel is towards '[r]eal time verification of status [that] will give other government departments and delivery partners, including employers and landlords, the tools to establish genuine, lawful, residence and rights' (Tomlinson and Welsh, 2020, p. 5).

The findings presented in this chapter show early examples of concerns with such digital infrastructure. I documented that many of the problems with the EUSS, even at the early state explored in this thesis, alongside technical and policy failings, arose from the failure to properly integrate the EUSS into the installed base of routines and IT of status checkers and to replace existing, paper-based modes of immigration status checking. This failure caused chaos and friction at many points, including hiring and traveling; any discussion of EUSS design should consider its interaction with these external infrastructures.

Chapter 5. Intermediaries and Supported Interactions with the EUSS

Summary

In this chapter, I look at intermediary actors and how people received and obtained support to manage the issues with the EUSS described in Ch.4. These issues had to do with the immense confusion as to what was expected of people applying for the scheme, especially for joining family members, and also with technical issues and confusion on behalf of status checkers. In the last chapter, I showed how these could be placed into two (albeit related) categories: a) problems that seem to be more technical in nature and isolated to the design of the EUSS and b) problems that relate to how the EUSS fits in with other systems and practices (see Table 8). To understand how both these categories of problems were responded to by users and other stakeholders, in this chapter, I explore how informal and non-governmental sources of information and support – which I conceptualize as intermediaries – were turned to in response to this lack of decent information, poorly-working technology, and overall chaotic implementation of the EUSS.

Engaging with government procedures and services typically relies on specialists who provide guidance to clients, such as lawyers and surveyors, as it often requires specialist knowledge of the intricate processes and practices involved. This is particularly evident in the context of immigration services, in which technology and bureaucratic procedures are opaque, and the law is complex and rapidly changing. The contemporary conceptualization of government processes as a service (sometimes called self-service e-government or public sector customer service (Fountain, 2001)) envisions computer systems as capable of substituting human experts in this domain. The EUSS was established based on this self-service model, and the government framed the EUSS as a self-service and user-friendly system to which anyone could apply from their computer or smartphone without needing support. As the Home Office (2018, p. 7 “EUSS: Statement of Intent”) writes in their statement of intent for the EUSS, “We are designing the online application form for the scheme so that it is short, simple and user-friendly. It will be accessible by computer, tablet or smartphone using internet browsers.” Civil society employees interviewed identified that the government was so adamant about this that, even when an applicant had appointed legal counsel, the government would insist on communicating directly with that individual rather than their legal counsel. The government’s use of a smartphone application allowed, and indeed encouraged, the EUSS to be applied for on one’s own, in any space one wished (e.g., one’s home, at work, or in a cafe), and without face-to-face or digital interaction with a government agent. The automated checks were supposed to further limit interaction between applicants and the government by reducing the need for applicants to clarify what documents were needed and for government agents to interact with them to request more documents. In this sense, the EUSS was supposed to follow a long tradition of self-service government.

However, in contrast to its depiction by the government, the EUSS, as documented in Ch.4 and Ch.5, was often challenging to manage, belying its framing as a self-service system. In response, applicants and

status holders sought to obtain information (about how to apply, their eligibility, their need to, how to evidence status, and so forth) and support from official and unofficial sources, which this chapter conceptualizes as innovation intermediaries. That so many people relied on support networks to use the EUSS was one of the principal findings of this thesis and undercut the idea that the project was a self-service immigration system. As I will show throughout this chapter, that this idea was misleading should not have been a surprise to anyone, not even the Home Office, who acknowledged the importance of support groups in civil society and even funded them to support applicants (see Sec.4). An open question, however, is the extent to which the need for support with the EUSS resulted from the design of the computer system, the particular vulnerability of EUSS applicants versus applicants to other immigration systems, or the way the EUSS interlinked with other computer e-government systems (see Ch.5).

The presence of intermediaries and support within the implementation of the EUSS suggests that researchers might adopt a different theoretical perspective to understand the project. While existing research (Ch.2) has approached the EUSS from a design and policy criticism perspective, highlighting the aspects of the scheme that are poorly conceived or built and demanding changes to them, it is well established in the existing literature that intermediaries typically form around both migration and new technologies (see below). The work on migration intermediaries and infrastructure, which I will discuss in Sec.1, has documented that migration is a field occupied by a vast range of middlemen and private actors who facilitate migration and integration into a new society. While existing research on the EUSS, for instance, Martin (2021), has highlighted the need for support many people had when applying for the EUSS, extensive research on such support has yet to be conducted.

To help understand the role of support and intermediaries in the implementation of the EUSS, one might also look at the work of STS and IS researchers looking at innovation intermediaries who, as I suggested in Ch.2, see intermediation as part of the expected implementation process through which an IT system will go rather than coding it negatively as something related to government or developer failure. This research generally challenges the idea that IT systems can be implemented without relying on a network of supporting actors. This is furthermore the case with e-government researchers, who highlight the range of actors and channels through which people interact with specialist government bureaucratic systems (see Madsen and Kræmmergaard, 2016). Such research implies that instead of the design and policy criticism present in existing studies of the EUSS, researchers might be well-suited to shift the focus toward examining how the EUSS was adjusted to accommodate various actors involved. Viewing the EUSS by looking at intermediaries and support networks allows researchers to identify how, to be successfully implemented as a new migration control system, systems like the EUSS need to be supported by a network of intermediaries. As this chapter documents, these intermediaries played a crucial role in facilitating the implementation of the EUSS, including assisting applicants and status holders. Consequently, this perspective invites an exploration of how the contradictions inherent in the neoliberal model of self-service government are addressed and managed in practice through the work of intermediaries and support groups.

- The chapter identifies how the problems described above were coped with through reliance on a range of intermediaries.

- By tracing out these interactions between applicants, status holders, and intermediaries, I seek to build on existing literature on innovation intermediaries and migration intermediaries and show the importance of these actors to border control IT.
- This discussion is built on in Ch.6, where I describe workarounds for problems with the EUSS.

Table 8. Key Takeaways from Chapter 5.

1. Framework: Challenging Self-Service Immigration Services

In this section, I briefly recap the theory relied on in this chapter, building on the framework discussed in Ch.2. While Ch.2 provides the main theoretical discussion of the thesis, in this section, I offer a deeper dive into one specific aspect of it: the role and function of innovation intermediaries and migration intermediaries.²⁷ I also discuss the idea of self-service e-government, provide a brief critical history of self-service e-government, and describe how the EUSS builds from this history. Finally, I argue that the framing of STS can help to show how intermediaries facilitate government services, challenging the optimism of proponents of self-service e-government by showing how e-government, in practice, relies on a range of intermediate actors. While I provide a more detailed list in Sec.3 and in the empirical sections of the chapter, to briefly mention here, examples of intermediaries in the EUSS case include civil society groups, friends and family, and employers. The EUSS was framed by the government as a self-service system that could be applied for and used from the comfort of one's home and without the need to interact with a government agent or get support. While, as I discuss in this section, self-service e-government has widespread appeal in many government agencies (Madsen and Kræmmergaard, 2016; Chen et al., 2021), the EUSS is somewhat novel in how it is being sold as a self-service immigration system. Even Sumption, while otherwise critical of the EUSS, accepts this framing of the project:

To encourage EU citizens to come forward and apply to the Settlement Scheme, the government has developed an application process that is designed to be easy to use. The application is generally submitted online and in early testing phases it took most applicants less than half an hour to complete. Other measures to encourage take-up of the scheme include an advertising campaign and grants to community organisations to support vulnerable EU citizens (Sumption, 2020, p.4).

The idea of self-service e-government is not particularly new in either research or practice, with it discussed as far back as the 1990s in terms of a method and philosophy of government (Fountain, 2001a). Self-service e-government has been implemented across the world, including the UK. It involves the use of digital technologies to enable citizens to access government services and information online without the need for face-to-face interactions with government officials. Areas of application involve information

²⁷ As in the previous chapter, the presentation of a short literature review at the beginning of an empirical chapter might be seen as non-standard. However, under the guidance of my supervisors, this approach was decided upon in order to provide helpful background to the reader without making the presentation of my theoretical framework in Ch.2 too unwieldy.

sharing, online chatbots, online applications for services, online voting, and online visa applications (Androutsopoulou et al., 2019; Fountain, 2005). Core self-service government is the notion that people should not need to go to a government office in order to conduct their business with the government, and emphasis is placed on customer service and user-friendly design (Fountain, 2001b).

This was also how the Scheme was set up on a technical level. In Ch.1, I looked at the many steps required to apply to the EUSS, including identifying the requirements, finding or acquiring an ID document, downloading the app onto one's smartphone, and scanning a chip in one's passport. These are framed as things to be done as an individual (or at the very least without any other person specified) and at no specified locations. Many civil society groups broadly accepted this framing.

This framing is typically contested by a range of literature on migration intermediaries in sociology and political science. There has been a longstanding interest in brokerage in the social sciences, with anthropologists examining how interactions between people and state authorities are often mediated (Lindquist, 2017). With the widespread rise of interest in political science in the migration industry (Gammeltoft-Hansen and Sorensen, 2013), understood as the range of professional actors who play a role in international migration, there has been a corresponding interest in those of them who facilitate the process of migration. While traditionally, migration research focused on networks of friends and family members who facilitated the bureaucratic and economic aspects of migration – e.g., finding jobs, apartments, and visas –there has been a growing interest in the more organized actors in the private sector and civil society who mediate migration (Jones and Sha, 2020).

As part of this literature, Žabko writes about what she calls "migration intermediaries," including in this category two groups of actors: "The first are various agencies and companies that facilitate access to legal migration, often offering a package deal (job contacts, housing, legal paperwork, and transportation). The second are individuals or smaller enterprises, typically set up by migrants themselves, who apply their transnational knowledge and networks to provide commercial services to prospective migrants" (Žabko et al., 2018, p. 577). Thus, migration intermediaries may be considered individuals and organizations that assist migrants in navigating the legal, administrative, economic, social, and logistical complexities of migration. Their roles, even within the categories provided by Žabko, are varied and often include offering guidance, advice, and practical support. Migration intermediaries often act as a bridge between the migrant and the immigration authorities of the destination country, helping migrants understand and navigate administrative burdens. As Jones and Sha (2020, p. 9) write, "Intermediaries can be viewed as a challenge to states' claims to be the only legitimate arbiters of migration." Documenting the activities and emergence of these actors challenges the excessive statism in security and migration research and can lead to a greater degree of empiricism in migration research. Similarly, Odasso (2021, p. 21), in her study of transnational couples, finds that "at the margin of immigration bureaucracy, almost all the partners encounter 'third parties,' who wield legal rules and translate formal law into action, playing a crucial role in the bureaucratic ordeal embarked upon by binational couples. These immigration brokers – activists and employees of support associations, lawyers, friends of friends – negotiate 'the authoritativeness of both official and unofficial legal discourses,' nudging the couples into circumventing (but rarely actually subverting) the law, and to 'acknowledge the multiplicity of law.'" Researchers point out how the need for intermediaries is a general feature of many specialist bureaucratic functions, including taxes, financial transactions, and medicine. What the migration literature points out is that both due to the difficulties of

navigating migration and the difficulties of navigating the bureaucracies of a new country, formal and informal networks are utilized.

Building on discussions of intermediaries, some scholars refer to migration infrastructures. Xiang and Lindquist (2014, p. S124) define migration infrastructure as “the systematically interlinked technologies, institutions, and actors that facilitate and condition mobility” and go on to “stipulate five dimensions of migration infrastructure: the commercial (recruitment intermediaries), the regulatory (state apparatus and procedures for documentation, licensing, training and other purposes), the technological (communication and transport), the humanitarian (NGOs and international organizations), and the social (migrant networks).” Scholars use this concept to move away from studies of migration infrastructure as primarily concerned with the behavior or decisions of individual migrants or with the dynamics of state migration control. Furthermore, the concept builds upon the work of scholars looking at migration intermediaries by introducing the role of technology. Xiang and Lindquist refer to both ICTs used to communicate between migrants and biometric technologies for surveilling migrants as examples of this infrastructure that facilitates the process of international migration. Methodologically, this approach encourages them to look at the intersections between technology, regulation, private actors, and government as determining factors behind people’s choices to migrate and the hurdles they need to overcome in order to do so. However, this literature has yet to examine how migration infrastructure itself evolves and the contribution of intermediary actors in shaping the development of migration control IT.

In response, one might look at how STS and IS research approach the question of intermediaries, particularly their discussions of innovation intermediaries (rather than migration intermediaries). Research on innovation intermediaries shows that users often do not encounter technologies unsupported or on their own initiative but rather via intermediaries. Research on innovation intermediaries in STS is rich, documenting how certain individuals and groups provide resources, access, and work that enables innovation. Innovation intermediaries are defined by Vidmar (2020, p. 23) as follows: “An innovation intermediary is an organization or a group within an organisation, whose main objective is to carry out interventions enabling innovation, either directly by enabling the innovativeness of one or more firms, or indirectly by enhancing the innovative capacity of regions, nations, or sectors.” Intermediaries tend to be described by their roles in enabling and facilitating innovation (Nilsson and Sia-Ljungström 2013; Howells, 2006) and are often understood in positive terms – they are understood to be essential for innovation. Different groups may serve different roles, and Vidmar (2020, p. 23-28) documents a range of roles that have been identified in existing research, including influencing decisions, sharing information, coordinating actors, providing feedback from some groups to others, designing products, offering resources or skills, spurring other actors to action, developing capacity within organizations, helping to frame or articulate goals or interests, connecting or gatekeeping between different actors, and conducting assessment activities. Others similarly note the range of roles that innovation intermediaries have.

Additionally, researchers often understand and categorize innovation intermediaries by looking at their social roles and how they engage with other actors (Pollock, 2005, p. 500). While I discussed innovation intermediaries briefly in Ch.2, I will make a few additional points here. The intersection between these groups is a key to understanding how technologies achieve closure and, in the case of the EUSS, become integrated into the lives of users (including those performing status checks). Studies point to the networks of intermediaries that emerge around technologies to support innovation, and intermediaries may fall

anywhere between the supply side and the end users and play various roles in more or less formal settings (Stewart and Hyysalo, 2008). There are individuals within the Home Office or the contractors who are developing the scheme who serve intermediary functions, along with users themselves who serve as intermediaries and dedicated organizations with these functions. As Stewart and Hyysalo (2008, p. 300) write, intermediaries, beyond impacting how users encounter the technology, “can have a dramatic effect on the structure of the innovating network, the constitution of the organizations involved, and the identities of the actors. Many of these actors and institutions are end and intermediate users and other societal actors such as governmental and non-commercial institutions.” Innovation intermediaries can create spaces and connections to share knowledge and resources, support action and development, and allow the development of novel uses of technology and workarounds. Throughout the empirical sections of this chapter, I will discuss a range of functions performed by intermediaries in the EUSS case, followed by a theoretical discussion in Sec.6.

This work has been taken further by border control implementation researchers in STS, who, as discussed in Ch.2, examine the range of actors involved with implementing border control IT. Concerning this doctoral project, the central role of intermediaries in innovation highlights the importance of studying how intermediaries serve to make the EUSS work better (in the sense of working out issues and enabling more people to register for it), but in doing so, have broader effects: for instance, contribute to changing the social and economic structure of the population of EU nationals in the UK after Brexit. For this reason, a central task of the thesis (RQ1) is mapping out the myriad of roles, relationships, and contributions of intermediaries to the institutionalization of the EUSS’ digital status.

2. Methodology

This section briefly recaps the methodology used to produce the results discussed in this chapter. In seeking to understand how intermediaries responded to problems (Ch5) and, in doing so, contributed to the development of the EUSS, in this chapter, I draw upon a qualitative analysis of interviews and reports to the 3million's report form. This qualitative analysis looks at the experiences of individuals seeking and providing advice for the EUSS. Doing so aims to offer narrative detail that can help to understand the ways in which people sought out support and how doing so responded to the problems they had (documented in Ch.5), and how this helped them work through these problems. This follows the theoretical interest in innovation and migration intermediaries and the ways in which they shape the development of the EUSS. The analysis involves a narrative examination of interviews, reports, and social media posts. The process of inductive coding (see Ch.3) was used to identify various themes, and the statements falling under these themes are explored in detail in this chapter.

3. The Failure of Official Sources of Support?

In this section, I look at how people tried and failed to get information and support for the EUSS via official and formal sources. Sources of information support documented in this study, following researchers of migration intermediaries like Žabko et al. (2018), are grouped into government (meaning that they were public-sector or public-sector-funded agencies), non-government organizations (meaning they were organizations but not public-sector or publicly funded), and social networks (meaning they

were individual, informal, poorly-organized, or with unclear accountability mechanisms). According to interviewees, these sources of support were turned to in response to the problems outlined in Ch.5, including both more technical difficulties and problems related to understanding the system. The first kind, formal, official, and government sources of information and support were those provided by the government as part of the remit of the EUSS. These included Gov.uk, the helpline that directed callers to the EUSS Resolution Center (See Ch.1), the Brexit newsletter, and government advertising.

Government	Non-government	Social networks
<p>Gov.uk website.</p> <p>Helpline (EUSS Resolution Centre).</p> <p>Brexit newsletter.</p> <p>Print advertisements (billboards).</p> <p>Scottish government.</p>	<p>Third-sector organizations (including grant-funded organizations), which offered support using a variety of methods, such as in-person events, online and offline webinars with lawyers, and social media posts, including instructional videos.</p> <p>Employers</p> <p>Universities (both as employers and educational institutions).</p> <p>Banks.</p> <p>Newspapers and television.</p> <p>Embassies and consulates (i.e., The French embassy sent out a lot of information to those registered with it).</p> <p>Members of Parliament (MPs).</p> <p>Chambers of Commerce.</p>	<p>Friends and family (i.e., children, parents, spouses, and friends who took an activist position informing people about the scheme).</p> <p>Social media. This included groups (i.e., Facebook groups and chats, WhatsApp chats). These were communication-focused channels that allowed people to ask questions and get advice.</p> <p>Social media platforms (i.e., Twitter, Reddit, web forums), which served a broadcast function for intermediaries who wanted to share information widely.</p>

Table 9. Sources of Information and Support Identified by Interviewees.

The rest of this section describes the particular dynamics of this case of formal support and information channels failing. I argue that the theories of migration intermediaries and innovation intermediaries discussed in Sec.1 help explain the failure of information and support and the consequent role of intermediaries.

3.1 The Website

In this section, I describe the use and failure of the UK government website for information about the EUSS. There were a range of formal ways in which people could get support. First, there was the Gov.uk website. While this website is in English, there is, at the last time I checked, information about the EUSS in English, Bulgarian, Czech, Welsh, Danish, German, Greek, Spanish, Estonian, French, Irish, Croatian, Hungarian, Icelandic, Italian, Lithuanian, Latvian, Maltese, Dutch, Norwegian, Polish, Portuguese, Romanian, Slovak, Slovene, and Swedish.

This website has been the site of immense development in recent years (something which itself could be the subject of a doctoral thesis). However, a general or extensive discussion of the website is beyond this thesis's scope. However, what is relevant to the case of the EUSS is that the website was, by and large, viewed as a poor source of support and was rarely turned to by respondents. While this was partly explainable by the fact that these were individuals seeking support elsewhere – and thus presumably may have already tried and failed to use the website or were predisposed against it – discussions of the information provided on the website were frequently fairly bleak.

“Yeah, so... and I didn't find that information anywhere on the official website. It was, I think it was some forum or something that I found on Google” (Interview 128).

In this case, what is interesting is that the interviewee described first going to the government website to find information, but then finding that information not to be there. She explained that she then went on Google and found a forum where people were sharing information and got the information there rather than on the government website. This case is interesting because the perceived unreliability of the website pushed the interviewee to alternative information channels. Another interviewee explained that they or other people were confused about how the EUSS worked and were upset that this information was only available on the websites, causing potential issues for people with limited English language or computer literacy

“So, nobody knows what a share code is. You have to find it on the government website, but it's really difficult to understand what you're supposed to do, especially for people who maybe have trouble with bureaucracy or with the language, it's really difficult, and a lot of people have trouble finding it” (Interview 168)

Another interviewee expressed that the information on the website was more than merely concerning because it was only online, confusing, and contradictory, particularly around waiting times.

“On the government website, there are two different information one page is still staying still under 28 days to get the reply, but on another page, the guidelines for administrative review are

now saying is more than more than three months, and they say we'll get in touch with you, if we take more than three months” (Interview 88).

This was also something expressed by interviewees working for civil society organizations, who said that even they, as advisors, found the website unhelpful and confusing. As one interviewee, an advisor for EUSS applicants explained to me about her experiences with the Gov.uk website:

“people really don't understand the rules, because they are not written on the government website, and when they are it's in a way that's difficult to understand and find. Ordinary people don't read because they don't understand. You also have to keep going back and reading again because the information is changing all the time, and you know we don't always have access to the lawyers to ask them for consultation or something, and so you have to do research yourself, but sometimes it's so hard to find information related to this. That we sometimes have to wait, you know what we're going to happen because we don't know we can find information ourselves as our advisors” (Interview 126).

Here, the advisor identifies several key failings of official sources of information to which intermediaries responded. First, there was the immense complexity of the rules, which required specialist expertise to understand. Second, there were the quick changes to the rules, which provided a barrier even for specialists. Finally, this interviewee noted that ordinary people (implying non-specialists) did not turn to the government website for assistance because of these reasons. These concerns are reflected in the framing of others, including in an article by Gbikpi (2020, p. 1), a lawyer writing on the FreeMovement blog, which states that “The EU Settlement Scheme is underpinned by a set of administrative rules called ‘Appendix EU’. Appendix EU is where the detailed rules on the Settlement Scheme are found. It is not easy reading even for lawyers, though, so this post tries to explain what the rules are and how the scheme works in practice.” There is a wide-reaching discussion about the complexity of immigration law both in terms of the byzantine language with which it is written and the frequent changes to the law (Manning and Collinson, 2019). Alongside the applicants and status holders I spoke with, the added complexity of Brexit made it difficult for many lawyers to fully understand eligibility for the scheme. As another interviewee explained to me, to really understand the EUSS, you need to understand both EU and UK law very well, and there are not many people who can do that. These issues pertaining to the problems with the website have to do with the poor implementation of EUSS with respect to information sharing.

3.2. The Helpline

In addition to the website, there was also the helpline, which connected the caller to the EUSS Resolution Centre. The Resolution Centre was set up early on to field questions via a helpline and assist people with resolving problems. Calling the helpline, users would navigate through menu options, many of which emphasized that one could find the relevant information on Gov.uk. This was intended to be a backup if information was not on the website or if someone had a problem they could not address on their own. A wide range of criticisms was made by both applicants and civil society workers regarding the helpline, explaining that it had extremely long waiting times and unhelpful menu options and that people on the other end were often unhelpful and provided information that seemed incorrect – additionally, the helpline was only available in English. These experiences are discussed in detail in this section.

One individual reported that he waited two hours on the phone trying to get in touch with the resolution center, the entire duration of his drive from London to Bristol. These long wait times were frequently reported and made it difficult and frustrating to access support in this way. One individual reported angrily that he was disgusted by his phone bill from attempting to call the helpline.

Another individual was renewing his passport and went through the process successfully, getting a confirmation email saying it would take a couple of weeks (Interview 118). A couple of weeks ago his employer, a construction agency, asked for a share code. His new passport number didn't work, but the old one did. He then called the helpline, and they apologized and said they would try to sort it out, but it would take a couple of weeks. For the past 2-3 weeks before the interview, he reported getting weekly text messages saying that it was in progress, but nothing happened.

In another case, a Latin American applicant for a travel permit reported his experiences trying to get an update on when it would be ready:

“I don't think they connect you with an actual person anymore, it just says don't call us before your application timeframe is up, which mine is and then just disconnect to you, I wrote multiple times by email as well, but that's just useless. I couldn't even get anybody to answer me. Basically what happens is you go through lots of different options right, and then you go to the right option, eventually, and then it rang and rang, then eventually like an hour or an hour and a half later there was a phone message saying, the person you're trying to reach is unavailable, if you leave a message they'll get back to you, so I left a message and over a week later I'm still waiting for them to return my call” (Interview 136).

In his case, this interviewee reported that he even worked with a lawyer to try to get information, and even this person struggled to work with them. Like others, this interviewee explained that he spent an extraordinary time on the phone and dealt with answering machines and struggled to get a person to speak with. Another interviewee explained that once she got someone on the phone, they were helpful, but getting to this point was very difficult.

“And as I said the two telephone calls that I had with them, although I had to wait an extremely [emphasis on this word, 'extreeeeemly'] long time to be connected, but once I was connected, I can't complain about that. They were very patient. They were very helpful” (Interview 210).

Others were very annoyed with how the helpline worked in general, framing this as a customer service failure. As one interviewee told me, he struggled to access a share code and went to the helpline.

“So, they say to you they will get back to you in 15 days and every 15 days they send you an email [doing a robotic voice, laughing and making fun of the automated email] ‘we're very sorry for the delay, we acknowledge your application is not straightforward and we'll get back to you and then there's just the same email, I mean verbatim and you're just stunned’” (Interview 66).

In this case, the struggle to reach a human being was reiterated. This interviewee further complained that he paid a lot of money to call the helpline, and wasted a lot of time on the phone waiting for someone. He

told me he just kept waiting and could not get a human being to respond to him, and eventually gave up. He told me that as a business person, he would never accept this, and compared it to a collapse in customer service systems.

“So it's now 20 days and they still haven't even bothered to respond to our escalation so it's just, it feels like it's collapsing, the system is collapsing, so I don't know what's happening behind I don't know if they only have a few people working in the office at a time, or whatever the case may be, which is understandable if you're in the middle pandemic and you're having a lockdown and such but, then you should modify your service timelines and tell people look it's going to take this long” (Interview 102).

There were also more complex cases of people struggling to know how to navigate the best interactions with caseworkers. These entailed confusion over how to handle the different routes for applying and responding to rejections and confusion over what kinds of documents to send in, and they represent a failure in communication by government employees around the scheme. In this case of a civil society interviewee:

“When you're refused it says that the possible next steps are an administrative review, which we have time 28 days from the date of refusal and for which you have to pay 80 pounds yeah, or as a new application, which is for free. But last week I heard that lawyers working closely with Home Office are saying that even if you are late, it's better to do late administrative review and write a letter saying why you are late, and also do a new late application, but here the problem is that people don't know that because it's nowhere in the guidance, nowhere in on the website. You can't see stuff like that, it's not publicly communicated, you know, put it on and people didn't know what to do. But also, it's confusing for us too, since we know that refusal is not a ground for a late application so it's very confusing, it is very confusing” (Interview 26).

Here, the interviewee notes that this information is not provided in the official guidance and many people may not be aware of it, meaning that navigating what to do in the case of a refusal requires interacting with someone with specialized knowledge – something that will be discussed in the next section.

3.3 Others

In this section, I briefly mention other sources of official support that I encountered during the study. There were also advertisements by the government in public places, such as public transportation stops. However, despite such advertisements featuring prominently in news coverage of the EUSS, I only encountered one individual who encountered one of them, and he reported already knowing about the scheme before seeing the advertisement.

One thing that I did hear about that apparently had some degree of success was efforts from the mayor of London to reach out to London residents and encourage them to apply to the EUSS. As one civil society interviewee told me: “I get updates and changes and recommendations and advice from the London mayor, the Open London Program, and they tell me about registering settled status. Our local authority also does this and sends out fliers to encourage people to apply” (Interview 55).

However, broadly, interviewees complained about the extent to which learning about and navigating the EUSS was something that was left up to applicants and status holders themselves rather than something the government took charge of and guided people through. As one interviewee remarked, “I mean it is left up to the individual to be responsible to know and on some level that’s true for any of it, I guess, if you want to do a visa application, you need to inform yourself but yeah” (Interview 11). However, this interviewee and others pointed out that the EUSS was different from visa applications, where people who were applying needed to do so to continue their life in the UK rather than to start it.

4. The Emergence of Semi-Formal Support for the EUSS

This section looks at the various semi-formal organizations that people interacted with to get support and information about the EUSS in the absence of formal and governmental ones. This section focuses on the emergence of semi-formal support groups as a response to the failure of formal ones. Interviewees documented that these sources of support were turned to in response to the problems outlined in Ch.5, including both more technical problems and problems related to understanding the system. First, looking at the failings of formal support, it documents how a loose network of civil society groups, lawyers, employers, and educational institutions formed as a network of intermediaries.

4.1 Civil Society

Interviewees reported relying on these sources of information, especially in the absence of good official sources of information about the EUSS. An ecosystem of civil society groups emerged to inform people about the EUSS and support their applications. These included, the3million, the Roma Support Group, Pomoc, the East European Resource Centre, The Citizens’ Rights Project, Settled, Citizens Advice, Feniks, the Roma Support Group, and CORAM. Other groups, such as general immigration or legal advice groups, began taking on EUSS-related functions, despite these being marginal to their ordinary work. As one interviewee wrote, “I heard about the EUSS from the3million. I follow them on Facebook. For a while, if I didn’t see updates from the3million, I looked at traditional media, and they tended to begin talking about EUSS issues super late compared to the3million” (Interview 9). While many organizations worked independently of – and framed themselves as a defensive bulwark against – the British government, many were also funded by it. A range of grant-funded organizations were tasked with providing support:

The Home Office is providing up to £9 million of funding and support to voluntary and community sector (VCS) organizations who have successfully applied to the EU Settlement Scheme Grant Funding. The awarded VCS organizations are supported to deliver practical assistance to vulnerable or at-risk EU citizens and their family members when applying to the EU Settlement Scheme (Home Office, 2019, p. 4).

Community support as a chief means of informing people about the EUSS was an established doctrine of the government, which belies the government’s claims that the EUSS was something people did not need support with. Such organizations, which included Settled, were turned to by many participants to assist in resolving issues and obtaining information.

Based on interviews, I mapped out a range of civil society organizations working with EU nationals in the UK that served various functions, often overlapping. Settled and Settled Scotland were charities established to provide support to EU citizens living in the UK who were impacted by Brexit. They were provided with government support as Grant-Funded Organizations to support individual applicants and status holders with problems they faced with the EUSS. Settled offered telephone advice to people in different languages. Interviews identified that people used these services for common concerns about their eligibility and requirements for applying and for more complex issues around evidencing their life in the UK and working through technical issues in the UK. The Citizens' Rights Project in Scotland served a similar function, offering advice and information and working with the Scottish government to run public meetings. The East European Resource Centre and the Roma Support group served similar functions, offering support and advice to their constituencies and advocating on their behalf. The 3million served a policy advocacy function but also ran information sessions and campaigns, often working with lawyers and academics.

Interviewees in civil society described doing workshops and events to provide people with info about the EUSS. These events served the function of providing people with help to understand how to get onto the system and often dealt with the most basic concerns that were not explained elsewhere. As one interviewee told me, "It's like answering all those pretty basic questions that like everyone has [about how to get onto the system and how it works], just over and over again" (Interview 187). These workshops took various forms to provide people with information and support. As one interview explained,

"We've got these things that are called outreach sessions directed to EU nationals, and then there are briefing sessions that are more for advisors, so social workers, or people in third-sector organizations that might provide support to some EU citizens. So, organizations working with homeless people, victims of domestic abuse, and people with mental health issues because that will reach the most vulnerable" (Interview 32).

People got involved in these groups in various ways, for instance, when they found lots of people coming up to them personally and asking for support. One interview told me that,

"I contacted my local community center and said you know, lots of people are asking me questions and so I went and tried to see if we could do this all in one place. Then I contacted people at [organization] and we worked together to organize some sessions, and they were quite helpful to you know they worked with me on that but there wasn't much engagement with that and it quickly ended, because again like I said, people don't really come to you unless they have an issue" (Interview 11).

However, at workshops and in their advice lines, these organizations struggled very often to explain things to people, and members complained that they found it difficult to provide support in understanding the rules.

"So, absences, people not understanding the allowance for absences, are a big thing. I'm having to help people make sense of that. Especially doing it in several different languages. It's tricky to explain to someone how long they can be away because it's not just six months, it's a six-month

within a rolling 12-month period. You can get caught out quickly and easily, and I had to explain that through the advice email and also to family members. The people that I'm talking to just don't understand it, and it's just not that easy" (Interview 55).

One might interpret this as part of the difficult learning process of the EUSS. While these groups may have emerged in order to smooth people's transition to using the EUSS – e.g., helping them understand the rules, providing them with physical infrastructure such as cell phones, and encouraging them to apply – this was not always an easy process. Even members of the groups often struggled to understand the EUSS and its legal architecture. In this vein, in addition to their function of providing support to applicants, some intermediaries provided information to professional groups, employers, and other support organizations. In this sense, they served as intermediaries between the government and other intermediaries. As one interviewee wrote,

"We have a bunch of stuff is the government, who is giving us money and they're quite active so, for example, we meet with them every month. And they are doing their own part, for example, they say right, we have met with a consular mission and we were told by this one consulate that they would like to organize a session or whatever, so they actually act as an intermediary to see as well, where the gaps are with the settlement scheme. So, we met with unions, we met with farmers or whatever and they will then go to us and they say, do you think you can organize a session for them, or do you think you can go and support these employers, employees, something like that" (Interview 14).

Similarly, one interviewee told me that his university in London told him about several civil society groups, noting that they were good places to get information if he ever encountered a problem:

specifically with this issue, maybe you can get some help. I went and they managed to help me, and they also told me this kind of problem happens all the time. Which was weird, because I was one of the very few people to whom it happened since you keep seeing in the news that so many people have gotten settled status" (Interview 106).

Here, this interview identifies the extent to which intermediary groups were often in contact, and civil society employees furthermore told me that they saw businesses, universities, and other activist groups as places where information could be shared to ensure that people's rights were protected. This is something well documented in the STS literature, which shows how intermediaries often serve the function of information sharing and often serve as intermediaries for one another (Vidmar, 2020). This was echoed by another interviewee working for a chamber of commerce, who reported that he frequently got questions from businesses asking how to employ EU citizens after Brexit and how to check statuses.

"So many companies have asked for advice about how to check that, and especially small companies, especially in the hospitality sector, they don't really know much about that. I mean if they know about the EUSS, they don't know how to check it but, generally speaking, some of them seem to really not understand how it works. For instance, I've been receiving so many questions from restaurants asking, can we hire that chef that was here three years ago. And I say, well, it depends if they have Settled Status if they were here before Brexit. People don't really

understand that now it's over and you need to apply for the status before it's too late, and if you want to check status, it's not enough to have that email, you have to follow the official procedure. My impression is that, given that bigger enterprises with HR departments that work just on these matters, they're probably more aware how it works, while Small and Medium Enterprises, they often don't have HR departments or HR people specialized in this, so the information that they receive is more like what they found on the website, or they ask people like us to provide support to them" (Interview 224).

Once again, this interviewee highlights how intermediaries often acted to support the adoption of the EUSS by others, in this case, the restaurant sector. While existing literature highlights that the hospitality sector would be particularly vulnerable to the impacts of Brexit, the extent to which this problem was addressed by the same groups who were engaged in supporting EUSS applicants is not talked about. This finding serves to highlight that there was indeed the work of innovation intermediaries taking place in the implementation of the EUSS, with its adoption into SMEs facilitated by a range of new organizations who sprung up or adapted themselves with this in mind.

Finally, these groups often framed themselves as checks on the government's development of the EUSS, and indeed oftentimes were. Such checks on the EUSS development included providing feedback, running media and political campaigns against the project, and even suing the government over violations of antidiscrimination law and the Withdrawal Agreement. In contrast to the role supporting the EUSS implementation that I described above, in these cases, civil society groups and activists painted themselves in a more adversarial light. There were consultations run by the government, which invited representatives from some of these groups to give feedback. However, the interviewees who attended these consultations reported that it was unclear how the Home Office used the feedback they provided. Minutes were not taken, and the government was not candid about how, if at all, they responded to feedback. This indicates a situation in which people I spoke with, lawyers and civil society group representatives, were serving a function typical of innovation intermediaries as described in the literature above, providing user feedback and insights to the government. While it is not clear, based on my data, how this information was received by the government and developers, it was certainly shared. There were also attempts to use media coverage to criticize the government in the public eye, including articles published by members of civil society groups in popular magazines and newspapers. These dynamics point to a blurring of the boundaries between innovation intermediaries and migration intermediaries, which will be theorized in further detail in the Discussion (Sec.6).

4.2 Status Checkers as Intermediaries

In addition to civil society organizations, in many cases, there were employers and schools – status checkers in general – providing information to their employees. In one case, an individual reported being informed by his university, which called to ask for proof of EUSS, and he saw posters around the university buildings advertising the EUSS (Interview 101). Others reported extensive support from universities, ranging from emails informing them of the need to apply to information sessions with lawyers. As one interviewee described:

“I was working here at my current company, and relatively quickly, they started hiring lawyers and ensuring employees had everything we needed. They set up a place that could do the

applications because iPhones weren't working at the time, so they set up Android phones just to make it easier for us to apply. And then, for those that applied but were having problems, then they said they started getting immigration lawyers to come in and talk about the scheme and what could be done and what needed to be done, and you know, and help smooth out any problems we were having. Yes, this is how I got all the information. When I applied, there was a fee, and the university even told us they would refund that money to us if we gave them proof that we had applied and paid it" (Interview 88).

In this case, the interviewee explained the extent to which support was provided by his university, highlighting the immense work that employers did in the higher education sector to ensure the EUSS was successfully implemented and thereby provided their employees with legal status. This included providing encouragement and information, technology – since, as noted above, iPhones did not initially support the app, and some phones struggled with NFC –, financial support – since at the start, the EUSS application was not free –, and an individual who could support people in the process. The latter is rarely emphasized in existing literature, but it was important since, as noted by both civil society employees and EUSS applicants, bureaucracy caused some people a lot of anxiety, causing them to put the application off. While in the data used for this study, higher education outperformed other sectors regarding the support provided to its employees, it was not alone in providing support. The role of employers as intermediaries was reiterated by a second interviewee in the financial services sector.

"They set up a phone in the place that could do the uhm because not all the phones could accept, uhm so you can have an apple phone because that you couldn't download the app, it wasn't working on the apple phones, so they set up actual phones just for us to use, then upload our passports and do all that stuff and to make it easier for us to apply. And then, for those that applied but were having problems, then they said got immigration lawyers to come in and talk about the scheme and what could be done and what needed to be done, and you know, and help smooth out any problems we were having" (Interview 130).

Interviewees working in retail and technology also reported emails from their employers informing them of the need to apply for the EUSS. This was for interviewees often what prompted them to apply. One interviewee described how his employer, a large retail and shipping company, knew that many of their employees were EU/EEA nationals and would be affected by Brexit.

"They do live training sessions, so they send you like, say maybe as an example, like we will do a training, and then on this next Monday and Tuesday, they will also have times available in case the Fridays don't work" (Interview 126).

This seems, in some sense, to encourage the interpretation that the emergence of a network of intermediaries was a response to the needs of stakeholders around the EUSS. Ensuring that their employees got status was a compassionate thing to do, but it also was an investment on behalf of businesses in industries with large numbers of staff from EU countries. Some of these industries would become victims of significant labor shortages in the wake of Brexit and the Covid-19 pandemic. Employers that I spoke with reported that they were concerned about their ability to retain staff, and one interviewee working for a chamber of commerce identified that this was particularly true for hospitality.

The work employers did to facilitate EUSS sign-ups was regarded by some interviewees as a very positive thing:

“They told me they're available for if we're having trouble and I just tried it and the application was super easy so. I didn't need to, but it's just knowing that you have somebody there. They had an entire pamphlet on you know, like guidance, which I guess came from whatever was published from the government that they shared, so if you had any issues, you can get the guidance, and it's just easier for us to do internally than try to serve a government website” (Interview 31).

4.3 Councils and Legislators as Intermediaries

It was also the case that many people reached out to members of parliament (MPs) for support. MPs would often contact the Home Office on people's behalf, which often returned expedited decisions. Some interviewees reported that upon contacting their MP, a decision on their application would be made in a matter of weeks. However, in other cases, it was not helpful at all, as seen in the case of the following interviewee, a family member of an EU national applying for Settled Status from inside the UK:

“And again, on the website, it still says it's a five-day turnaround. It hasn't been updated since 2020, so I knew it wasn't going to take only five days, but I didn't think seven months later, I would still have heard nothing. And I reached out to my MP, who got in touch with the Home Office on my behalf, and they came back and said my application was in the final stage of being looked at, but that was months ago and I heard nothing since then. So, I've reached out since then several more times to my MP's office and they've just gotten a response back from the Home Office saying I just need to be patient” (Interview 181).

This interviewee's experience was representative of many people I spoke with in that she reached out to MPs attempting to get support or answers about the progress of her application but still got standard replies from the Home Office. This led both to feelings of insecurity and actual insecurity with her employment. Factually, the employer was still in their right to employ her, but it created uncertainty both for them and for her, not knowing if she was allowed to continue the role upon a decision on her immigration status. This role of MPs as intermediaries is interesting because, despite being government employees, these individuals functioned as intermediate actors between EUSS applicants and status holders and other parts of government.

“A Member of Parliament sent a letter to all the Europeans in his district, including myself, to let us know that if we had any issues, we can just reach out to them for support” (Interview 50).

As the quote above identifies, MPs were also reported, similarly to employers, to be reaching out to their constituents on their own violation to offer support. This was not something that was documented to be emerging from prompts by the government, but individual MPs (or potentially individuals in their offices) deciding to act as intermediaries between their constituents and the EUSS. This role of MPs and why they took such initiative is not captured extensively in my data and deserves further investigation by others.

5. Informal Support and the Influence of the Pandemic

In addition to these semi-formal sources of information and support, there was also immense reliance on support from informal – offline as well as online – contacts. I include in this category friends and family (e.g., children, parents, partners, spouses, and friends) alongside social media, including Facebook groups and chats, and WhatsApp chats. This section describes how interviewees discussed accessing such information and support and what it entailed.

One individual, a retired educator with Belgian citizenship, identified that it was only after speaking with her daughter (a lawyer) that she realized that she needed to apply for the EUSS. This is a point not often stressed in existing research on the scheme, in which the inadequacy of official sources is often stressed but not the emerging compensatory mechanisms.

“Having been in the UK for so long, I was not super worried after Brexit. I assumed I had a permanent residency, but then I talked to my friend, whose daughter is a lawyer, and she was like, ‘no, no, no you need to apply for this thing’. So, on this advice, I went into the town hall and filed an application” (Interview 13).

However, this interviewee still remarked upon being asked if she had gotten any support with the scheme, “None! I was completely alone. Considering the pandemic, I wasn’t even able to see my children face-to-face, only on the stupid telephone” (Interview 34). Interviewees from civil society reported that people would often get information from their immediate social environments.

“Other than just generally, the main thing is, I think from my experience, that people just share information organically. A lot of a lot of friends that like work in [company] or [company] and like they are at work and they are just like oh did you apply? Things like things like that. It's not the most formal sense like, very few of my friends would know what [civil society organization] is or what it does” (Interview 1).

The support provided in workplaces where there are many EU nationals, all in the same situation as a result of Brexit, was critical to ensuring people knew they should apply. This might be considered analogous to the support offered in other workplace communities (see Gregory, 2021). In addition to people helping each other in the workplace, still other cases I encountered involved individuals helping others in their immediate social environments. There was also the case of a Portuguese citizen who assisted his mother with her application. Upon doing so, he reported being inundated with phone calls from his parents’ friends asking for advice and support with the EUSS, which, in many cases, he was able to provide (Interview 5). In another case, a long-term UK resident with French citizenship described assisting her colleagues in applying for the Scheme with limited success:

“An ex-colleague of mine is in a similar situation. She’s a doctor like me and hasn't applied yet. I managed to visit her between lockdowns, and I strongly urged her to apply for this thing. She had no clue, no clue at all how to do it. So, I still don't know if she’s done it. The last time I talked to her was a couple of months ago, and she said, ‘oh well, my nephew is going to help me’, but I’m really worried she still won’t do it” (Interview 202).

In a sense, this represents a failure of official channels of information. This specific interview was conducted in January 2021, less than six months before the deadline and more than a year after applications for the Scheme opened. So, in theory, there was adequate time for information on how to apply to be shared. As mentioned above, it was widely reported by interviewees that they found the Gov.uk website confusing and the process, in general, difficult to understand – others found it anxiety-inducing and difficult to navigate on their own. Others identified that they had learned how to go through the application process and subsequently started actively assisting friends to go through it themselves. Such individuals might be understood to be serving as warm or local experts, typically defined as individuals with (IT) expertise who assist others with new technologies in informal settings or their immediate social context, something widely documented in the implementation of other e-government programs (Stewart, 2007; Madsen and Kræmmergaard, 2016). As Stewart (2007, p. 551) writes,

“the local informal economy of artefacts, ideas and knowledge [...]constitutes the essential foundation for the widespread appropriation of new ICTs. Within this local informal economy certain people are relatively more knowledgeable or experienced with ICTs than others: they play a special role providing a range of information to those around them; they help others with their personal adoption of new technologies; they assist in interpreting what new technologies might mean for their lives and those around them; and they provide ongoing practical support in the use of and upgrading of ICTs.”

Such a view has been applied in other contexts, such as mandatory e-government, and synergizes with the work of researchers writing about migration intermediaries discussed above. In the EUSS case, this framing can help to understand the implementation of the EUSS and how informal networks and connections were vital in ensuring the project was successful. Some shared cell phones and walked friends and family members through the application process. Individuals providing informal support framed it as necessary public service in response to an excessively legally and technically complex scheme. Some of this support was limited to simple information about basics: the deadline, the smartphone app, etc. In other cases, it was regulated by the Office of the Immigration Services Commissioner, and members of certain civil society groups were provided with accreditation to offer legal advice. Support was also oftentimes pervasive and done without the mandate of a regulatory body, such as questions and answers on Facebook groups. In all such cases, it sat in a gray area that carried some dangers. Borrowing Tomlinson’s (2019, p. 51) phrasing, there was “the possibility that ‘digital assistance’ strays into giving inappropriate and unregulated legal advice.”

Such informal support was also particularly relevant during the COVID-19 pandemic. The pandemic forced many people to stay at home, resulting in increased social isolation for many people. As a result, people were disconnected from their social networks, decreasing their ability to access technology, information, and assistance from others when applying for the EUSS. This was documented by one interviewee who detailed how he had not seen his friends or family for much of the pandemic, making it difficult to borrow a cell phone in order to apply for the EUSS.

“I decided to apply sometime last year. I just saw I just bought a friend’s phone and do it whenever I see another friend who has a better phone and then the pandemic happened so I didn’t

see anyone for months. Or, you know, we didn't share devices. Or anything like that. And yeah, eventually, like when I saw, I met my girlfriend during the lockdown. And yeah, I used her phone to apply, but you know it was yeah, the fact that you need a modern phone to even apply for settled status was a bit frustrating. But yeah, once I did, the process was quite smooth, so I think they got settled status within a couple of days or something like that” (Interview 119).

Finally, there was also the report form on which this project relies. The report form, while in one sense a tool for data collection about the scheme's operation, was also used as a method of accessing support by some people.

“The helpline people were telling me that they couldn't find my records, and then, yeah, there was no help available as to how to work around that. So yeah, I think that's why I initially filled out the form because I just didn't understand what to do” (Interview 31).

5.1 Online Venues for Legal and Technical Support

Social media – which in interviews included online social media platforms like Facebook, Twitter, and Twitter, advertising on these platforms, a range of BBSs, and semi-closed communities operating in Facebook groups and WhatsApp chats – was a major source of information about applying for the scheme, employed both by civil society groups and by interested individuals. This was especially the case considering the pandemic and subsequent lockdowns in the UK starting in Spring 2020, which prevented people from accessing physical offices. One interviewee, a civil society employee, noted that her office in a Scottish city was used during this time but only in rare cases, and support was done over the phone and on Facebook. Likewise, a number of civil society employees reported to me that they relied on online informational campaigns, such as paid Facebook advertising, webinars, and Twitter posts. As two interviewees told me:

“I see information about the EUSS mainly on Facebook and Instagram, and even on TV while I was in Poland. I think people should already know that you have to have status” (Interview 138).

“The only place I see information about the EUSS is Twitter. Apart from that, there's really nothing and I never see information being shared in other places” (Interview 45).

Pandemic aside, social media served as a major source of information for people. Interviewees expressed a concern that they were unable to access support and that Facebook groups were a way of addressing this. For some, this had to do with the lack of a physical location where one could go to apply or get support. Here, the methodological issue identified in Ch.3 also prompted people to go online since there was nowhere to go in person.

“The group is for the Italian people living in the UK and British living in Italy, and it's just a lawyer you know is there sometimes and it's not the lawyers' group, it makes sense, I know she's there and is really good, and you know if you have any questions, you can ask them if it's just simple things like that, she will just tell you. Because this is the thing, you know there's not really

anywhere to go. Because what I feel is you know there's no local place where I can go.” (Interview 11).

Others highlighted the geographic inequality of access to support. People who lived in an area with lots of other EU nationals were in a relatively auspicious social context since there was a concentration of others in similar situations, be it at their place of employment or local community. Those in areas without many other EU nationals faced a different situation, in which they were isolated and without other people with similar experiences to whom they could turn for support or who could share information with them.

What I find is that you see people who live in big cities, there's quite a lot of people there and people to go to, and they have no issues. Then I see these people who live in places like myself, that they are you know it is very small places with there is no, you know, because they might be in London and a company and 50% of the staff or you know great number of the staff are non-British or you know are European, they know they are very aware from the people who are having issues as people who live in small places (Interview 175).

In my interviews, I also observed a Facebook-centricity of online support.²⁸ This social media platform in particular, was used very often for asking questions and looking for information, in particular a) Facebook pages of civil society groups and b) Facebook groups. As one interviewee wrote, “I went on Facebook groups a lot. People just help each other out, write about their issues with the EUSS and what people can do” (Interview 22).

Facebook groups operated on a spectrum of formality and professionalism (although this is not to imply that some groups offered more competent advice than others). Some of the most important ones were institutionally based, but others were run by interested individuals dedicating their time to assisting others. Some of these individuals, and some of the commentators in the groups, had expertise in immigration law, while others appeared to be merely individuals interested in helping others. Another category of Facebook groups that played a large role was that of groups run by civil society-affiliated individuals but not by a specific organization. One interviewee, a volunteer with a civil society organization representing EU citizens in the UK, told me:

“I have been helping people around, not only in my local area but online as well. I’ve been involved in two Polish-language Facebook forums, one run by an organization and another one. We are working with people every single day, basically, with different kinds of problems” (Interview 92).

This interviewee also reported that many people came to these forums due to issues getting support via the EUSS resolution center. Even civil society groups had issues with this, and struggled to contact the resolution center with their designated phone number. When issues arose, many of which were easily solvable with sharing the correct information or fixing of technical errors by the EUSS resolution center,

²⁸ However, since findings from social media data are omitted from this thesis, I am unable to provide figures on usage (e.g., number of participants in Facebook forums) or practices of support or information sharing on these forums. Examination of these groups in detail should be explored in further research.

these Facebook groups were turned to for support. In addition to civil society people running Facebook groups, some interviewees from civil society reported that they would occasionally post in groups to share support.

“So, I think a lot of those Facebook groups continued being used as a hub for information sharing, like people would ask, like, oh, what do we have to do? And then they would... people who have got a little bit more information, for example, I would sometimes like, sometimes find a question there and answer it ourselves. Or start pointing, like to the Brazilian church, for example, and say if anyone needs to ask any questions about this, I'll be here this weekend, I'll be able to help you with your application. And I think just naturally, like organically, my grandmother who goes to Brazilian church and is in many of these WhatsApp groups, would share that information that I passed on to her. And I think most of it is based on also, from what I've seen, it was based on social media people say, Oh, I saw this is that true? Do I really need to apply for it? And then they would ask someone that's like reliable, like a lot of my grandmother's friends would come and ask me because my grandmother would tell them, you can ask my granddaughter since she knows about this stuff” (Interview 143).

Similarly, another interviewee reported that he had faced personal issues with the EUSS which motivated him to join the Facebook groups and clear up the misinformation.

“There's this new card I just got in March, April, the start of this year, because I was hearing a lot of news that or that after June, because they, you know the settlement scheme the deadline is June the 30th 31st so I was, I was hearing a lot of this information and that oh like if you go outside you can you come back your old card is not going to work so there was a lot of mixed information there was... I even tried to go to the government for retrieving any information regarding that and then there was a lot of confusing information there was not... and they were saying oh yes, if you if you've got the settled status successfully your card will still work but at some point, there are would say somewhere else, they would say oh your card won't still work. So, there was a lot of mixed information and confusing information, and a lot of people are saying. I actually joined a few groups as well on Facebook, which are private groups where people will come and talk about their problems with immigration. So, in those groups as well, there was a lot of information they were saying or your card won't work after the deadline, so then at that point, I thought, like let's change it to them” (Interview 91).

In this case, the interviewee described how he faced a lot of confusion about the rules and process for the EUSS, so he looked online for support. He found this information online and decided to act as a warm expert himself, helping people work out issues and accumulating knowledge in the community about how the EUSS worked. Such knowledge and informal support could be relied on even if governmental sources of information were unreliable (such as the website) or difficult to access (such as the helpline).

6. Discussion: Innovation Intermediaries in Migration Control

In this section, I discuss the findings of the chapter. In Ch1 and Ch.2, I discussed how STS and IS researchers have often left discussions of border control, national security, and policing technologies to legal scholars and political scientists. Reflecting on the findings regarding support networks, this section explores how focusing on intermediaries can help to understand the implementation of the EUSS. In this discussion section, I reflect on three points:

1. The difficulty of how to characterize the intermediaries that were found in the case of the EUSS. Are these migration intermediaries, innovation intermediaries, or something else? This discussion points to the development of a novel theory of migration intermediaries and innovation intermediaries in the implementation of border control technologies.
2. The importance of these intermediaries for understanding the implementation of the EUSS.
3. The centrality of online support opens important questions about the role of online platforms in immigration advice, which should be the focus of further research.

The findings in this chapter contribute to the emerging story being told in the STS research on border control IT. In particular, by helping to understand how intermediary groups should be seen as a regular part of border control IT implementation. I also reflect briefly on what the general conclusions to be drawn from this chapter are and the limitations of these conclusions.

6.1 What Kind of Intermediaries?

In this section, I describe the functions of intermediaries in the EUSS case and argue that the language of innovation intermediaries is a helpful way of understanding them. The study documented the crucial role that intermediaries played in assisting people in learning how to use the EUSS, addressing problems, and coping with the changes it caused. Throughout the study, I documented how a range of people and organizations, including Intermediaries refer to organizations or individuals who provide support to EU citizens in applying for the EUSS. These intermediaries included community organizations, civil society groups, local councils, and charities, law firms, local libraries, elected politicians, employers, friends, and family members, formed a network of intermediaries to support the implementation of the EUSS. among others. They provided practical assistance and advice to individuals who were unsure about the process of applying for the scheme, including explaining how the online application worked and what documents were required.

Intermediaries also helped EU citizens who were facing difficulties in accessing the EUSS due to language barriers, digital exclusion, or lack of documentation. They provided translation services, helped individuals navigate the online application where technical literacy was a concern, and supported those who struggled to provide evidence of their residence in the UK. These activities can be understood in light of the literature on migration intermediaries discussed above, which has found the emergence of networks of middlemen and support workers who facilitate international migration. However, the functions of the intermediaries documented in the study also included providing feedback to the government, helping users work through routine technical difficulties, ... These functions map onto what STS and IS researchers have documented in the cases of innovation intermediaries, however such

functions have yet to be documented in the case of border control IT implementation. This suggests a gap in both the literature on migration intermediaries and innovation intermediaries, as my findings make clear that, at least in the case of the EUSS, various intermediary groups serve key functions both in enabling migration and enabling innovation in border control. This discussion is continued in Ch.7. In addition, intermediaries provided emotional support to EU citizens who were feeling anxious or overwhelmed by the application process. They acted as a source of reassurance, providing guidance and support to individuals who were worried about their future status in the UK. Overall, intermediaries played a vital role in assisting EU citizens to navigate the complex process of applying for the EUSS, especially during the early stages of implementation.

6.2 The Contribution of Intermediaries to the EUSS

The second significant contribution these findings can make is the extent to which innovation intermediaries were a critical part of the implementation of the EUSS. This supports the ideas advanced by innovation studies researchers who treat intermediaries and supported interactions as normal parts of innovation, and this challenges policy assumptions about self-service e-government. Furthermore, the realization that intermediaries were so important shows that researchers might consider them to be of greater importance than Home Office-focused studies have given them thus far. These findings can help to understand how intermediary groups should be seen as a normal part of border control IT implementation rather than a refutation of dreams of self-service and digital border control. Rather than indicating that an IT system, and in this case, the EUSS, is not working, the reliance on intermediaries is seen in STS literature as part of the expected path of technological innovation and something to be celebrated and supported.

The findings furthermore show how and whether the EUSS functioned as a self-service IAM system. As discussed above, the EUSS was often framed as a self-service system that people should be able to apply for and use to prove their status on their own. Civil society interviewees argued that this approach was part of the government's attempt to cut costs, while the government framed it as a way of effectively registering the 3+ million individuals eligible for the scheme. This trend of self-service e-government has been seen across government (Madsen and Kræmmergaard, 2016; Chen et al., 2021), but as discussed above, it is a relative novelty in immigration. However, where one might look to the EUSS for inspiration for other immigration control IT projects utilizing a similar approach, this study of the EUSS offers a cautionary tale about how projects framed as self-service might function in practice. There are two elements to this.

First, the amount of support people required with basic issues (such as understanding what share codes were or navigating the smartphone app), even given how much of the EUSS was automated compared to other immigration schemes, suggests that support and intermediation should be a central part of scholarly explorations of the implementation of these projects. Based on these findings, one should not assume, as a policymaker or IT professional, that the users of an e-visa program will have an easy time understanding the basics of that program and how to use it. As border control projects are put into place, scholars and policymakers ought to examine the existing and emerging network of intermediaries to understand their potential contributions to its success. In the EUSS, due to poor implementation in many cases, intermediaries were particularly vital.

However, the question is whether the Home Office has been the primary actor shaping EUSS's impacts on people. The Home Office has undoubtedly, as one sees from existing literature (Ch.2) and the findings presented in Ch.5, made poor choices in the design and implementation of the EUSS, which have had deleterious impacts on applicants and status holders. However, data collected and analyzed in this chapter indicates that in contrast to existing framings, it was rarely a story of a design choice directly impacting an applicant or status holder. Rather, users often encountered the scheme by reaching out to available contacts (or vice-versa), who would often deal with the scheme on their behalf or provide information and assistance. These groups performed various functions, detailed in this chapter, from informing people of their need to apply to filing applications on their behalf and assisting them with generating share codes. At almost every point of contact people had with the scheme, I documented cases of intermediaries who would involve themselves somehow.

6.2 Online Immigration Support

The importance of social media groups during the implementation of the EUSS also potentially said something interesting regarding the role of digital technologies in immigration system implementation. Given the reported lack of good official support and information, respondents reported going to social media for support, as discussed in Sec.5. As Marres (2017, p. 4) writes, "We must equally consider whether and how 'the digital' entails changes in the relations between technologies and social life; between knowledge, society, and technology." Here, we might follow Marres in understanding the significance of social media in easing the Brexit process and helping to develop a kind of lay expertise (Wynne, 1992) of the EUSS and immigration systems. While migration research has hinted at the value of online platforms for research (Tjaden, 2023), studies of their value as tools for the development of expertise have yet to be undertaken.

6.3 Conclusions and Limitations

Finally, this concluding section will discuss the overall conclusions of the chapter and the limitations. Overall, the chapter showed the extent to which the EUSS was accompanied by a wide range of intermediary actors who assisted people in resolving the problems described in the previous section. I have argued that these people served a vital role in facilitating the adoption of the EUSS and easing the process of resolving problems. Additionally, I have shown that instead of just thinking about these people as facilitators of migration per the literature in Sec.1, STS work on innovation intermediaries brings value by showing how these people facilitate the adoption of new technologies. These findings, building on existing work on migration and intermediaries, question the ability of government agencies to successfully implement migration control IT without the influence of outside actors. They also demonstrate a possible path forward to the engagement of STS researchers with internal border control.

However, there is a significant bias to these findings. First, for my interviews, I only spoke with people who got support and information, not people who did not. The result is that it is possible that a study dealing with people who used the EUSS without assistance would have different findings. Those studying extremely socially isolated people would likely have a very different picture of the EUSS. Additionally, as mentioned above, the study used a snowball sampling approach, which has limitations in terms of representativeness as mentioned above, I was not able to speak to the full range of intermediary groups

working with the EUSS. However, it is my hope that these findings are a start to a better understanding of the role of intermediary groups in the adoption of border control technologies, especially in cases like the EUSS where they are implemented for an already-resident population.

Chapter 6. Workarounds and Social Learning in the Implementation of the EUSS

Summary

In this chapter, following the thesis' interest in how people navigate the EUSS and in the processes of social learning within the EUSS, I examine a classic concern in the STS/IS literature: how people employ workarounds when they are obliged to use technology that makes their work difficult. Despite a longstanding tradition of research in STS and IS, workarounds are a relatively new subject in the study of border control technologies. Typically, as I argued in my discussion of the security studies and gap hypothesis literature in Ch.2, non-standard use of border control technologies falls under the categories of the difficulty of coordinating migration control (Ellermann, 2009), governments signaling authority rather than exercising it (Badenhoop, 2020), discretion by street-level bureaucrats (Hill and Hupe, 2002; Ellermann, 2009) or resistance by migrants (Torpey, 2000; Lyon, 1994; Broeders and Enbersen, 2009). The idea that national security or border control technology can be productively misused has been hinted at elsewhere but has yet to be studied empirically or in great detail. The STS and IS literature on border control has engaged somewhat with this discussion, although this has been a limited engagement thus far, often stopping at showing that border control technologies are ineffective in their control of migrants rather than going further to discuss how this lack of control or efficiency is learned from and has implications for the functioning and further development of the technology (see Glouftsiou and Scheel, 2021).

The concept of workarounds has a long history in STS, describing "goal-driven deviations from standard operating procedures that employees perform to resolve perceived constraints at work, cope with a perceived poor task-technology fit" (Bartelheimer, 2023, p. 1). However, where scholars of migration and state security discuss digital technology as anything other than successfully achieving its stated goals for controlling populations, this deviation from expectations is usually accounted for by a) government incompetence and failures and b) difficulty coordinating other agencies and street-level bureaucrats (Boswell and Badenhoop, 2020). These lines of argument have been explored in Ch.2 and are here briefly restated. In the first case, migration control is understood to not go as planned because of the discontinuity between the stated goals of migration control and the reality of how difficult it is to control migration or the underlying goals of policymakers (Slaven et al., 2020; Boswell and Badenhoop, 2020). In the second case, there is understood to be difficulty translating policy into practice due to the need to coordinate a range of frontline actors.

The more downbeat assessment of IT within STS and IS literature, in contrast to this literature, suggests that people tend to use IT in ways that contradict developers' intentions (Davison et al., 2021; Hyysalo, 2021). However, this contradiction is not always in the sense of resistance and is often in ways that compensate for a system or artifact's flaws rather than exploiting them, thus contributing to its success (Gerson and Star, 1986). Similarly, when workarounds identify design flaws and gaps in an IT project, developers will often modify that project. Building on this literature by extending it to migration and

security technologies (particularly the EUSS), this chapter aims to fill this gap in the literature and investigate an aspect of the EUSS that merits further discussion. In particular, I stress that by looking at the EUSS through the lens of technology implementation, one can understand how workarounds, in addition to being a form of resistance with a sharp anti-regulatory connotation, can also be characterized as mundane, processual, apolitical, and indeed expected parts of IT implementation.

Methodologically, this chapter builds on the analysis in Ch.4 and Ch.5 of the problems people faced with the EUSS, and the examination of support networks in Ch.6. This is done with a qualitative examination of how workarounds were used during the implementation of the EUSS. Discussions of workarounds in social media posts, reports, and interviews are drawn out and examined in terms of the following: First, what kinds of workarounds were used? Second, what kinds of shortcomings and concerns with the EUSS they sought to address? And third, Did they appear to have had an impact on the development of the EUSS? This third point of interest is drawn from the STS literature (see Ch.2), which shows how workarounds and user feedback contribute to modifying the original (flawed) technology over time (Savolainen, Kaisa, and Hyysalo 2021), a process sometimes called social learning (Stewart and Hyysalo, 2008) or innofusion (Fleck, 1993). Others document processes of designing with these modifications in use in mind, using the term design for appropriation (Dix, 2007). This examination is expected to contribute to RQ3 (How did applicants and status holders employ workarounds to respond to problems when using the EUSS?) and RQ2 (What sort of intermediaries emerged to support the implementation and adoption of the EUSS and what were their activities?).

The chapter discusses the following findings: besides relying on support networks, as discussed in the previous chapter, EUSS users relied on various workarounds when facing issues with the EUSS. These workarounds were employed to cope with a range of issues (see the table in Section 2), including the misalignment between the EUSS and existing practices of status holders and status checkers and its at-times poor functionality (e.g., failure to generate share codes or find corresponding records (see Ch.1). Workarounds documented in this study include the following: First, people were documented to be using printouts of the View & Prove your immigration status (V&P) system in order to demonstrate their status. Second, they used the confirmation of application (CoA) or letter from the Home Office to demonstrate their status. Third, institutions were documented to be using old right-to-work (RtW) documents or application letters in place of or in addition to using V&P. Workarounds are categorized in this chapter based on who employs them: applicants and status holders, status checkers, and the government.

The implications of these findings, discussed at the end, are as follows. First, these findings evidence that V&P was a substantial break in practices for many status holders and status checkers, who often wanted or expected a physical or self-verifying document to be checked immediately and face-to-face. Second, non-standard use may be part and parcel of the implementation and process of social learning (see Ch.2) of the EUSS, despite their framing as otherwise by security researchers. This observation suggests that the migration literature's emphasis on resistance and subversion might be misleading and obscure more mundane effects and origins of non-standard use. By following STS and IS literature in seeing such workarounds as not necessarily intentionally political in any given way and understanding that they can both hinder and also contribute to development, even in migration control IT projects, researchers will be better able to understand their role in implementation.

- The EUSS was characterized by a great number of workarounds and non-standard uses.
- STS and IS literature provide a useful toolkit to explain how such workarounds arise and the impacts they have on border control IT projects.

Table 10. Key Takeaways from Chapter 6.

1. Revisiting Research on Workarounds in IT Implementation

As we saw in Ch.2, literature on border control suggests that workarounds are a common and generally disruptive response to or part of the implementation of border control IT. However, a group of researchers has recently begun to suggest that the implementation of border control technologies may be significantly more flexible in terms of how people use and respond to them. In this section, I set out in more detail insights from the STS and IS literature on workarounds which the findings build upon.

As we saw in Chapter 2, the notion of workarounds is drawn from STS literature, showing how users often use technology in ways that go against developers' intentions. Scholars in the fields of STS and IS began writing about workarounds as early as the 1990s (Ciborra, 1991), in some cases building on the older literature focused on tracing how information was used within organizations and how informal processes in organizations have diverged from formal structures (see March and Simon, 1993; DiMaggio and Powell, 1983). A robust tradition has been established in STS and IS on the involvement of users in innovation. Köhler et al. (2019, p. 13), noting this research tradition in their review of technology transitions literature, write that “users play important roles in the formative stages of technology development, having contributed to the development of socio-technical innovations such as wind turbines, solar collectors, and low energy housing. They also generate entrepreneurial ideas, trials and gradual improvements in understanding how technical systems and their interplay with everyday life plays out.” In addition to the range of productive role of users early on in technology development, researchers recognized that individuals within organizations often develop unofficial or ad hoc methods to bypass or supplement formal systems or processes perceived as inadequate or inefficient (Lee and Lee, 2021; Duguid, 2012). These workarounds can involve using alternative tools, technologies, or procedures to achieve desired outcomes or address specific challenges. The early studies on workarounds in IS focused on understanding the reasons behind their emergence, the impacts on individuals and organizations, and the implications for system design and implementation. Researchers explore workarounds in various contexts, such as the use of spreadsheets to supplement enterprise resource planning (ERP) systems (Davidson et al., 2021), improvised work procedures in healthcare settings, or the use of shadow IT to fulfill specific information needs.

A simple definition of workarounds comes from Alter (2013, p. 1044):

A workaround is a goal-driven adaptation, improvisation, or other change to one or more aspects of an existing work system in order to overcome, bypass, or minimize the impact of obstacles, exceptions, anomalies, mishaps, established practices, management expectations, or structural

constraints that are perceived as preventing that work system or its participants from achieving a desired level of efficiency, effectiveness, or other organizational or personal goals.

Workarounds respond to the challenges posed by a person's situated interactions with a given technology and can be facilitated or necessitated by an artifact or a context's unique characteristics (Suchman, 2006). However, the approaches to workarounds advanced by Suchman, Alter, and others working in STS and IS are different from how the field of security studies approaches resistance to migration control due to the former not labeling workarounds as political in any given way – workarounds can be both positive and negative for the success of new technology, and both positive and negative for users. In addition to workarounds with a more deleterious or adversarial character with respect to IT development (the kind of thing one observes in the literature on migrants' counter strategies, Ch.2), STS and IS treat document workarounds of a more constructive nature, with some authors even viewing them as an essential resource to be drawn upon in the evolution of technology and a mundane and expected feature of technology implementation (Hyysalo, 2009) and others arguing that developers should encourage workarounds (Dix, 2007).

Concerning both the motivations and effects of workarounds, STS and IS are pragmatic, identifying how workarounds may be done in response to a wide range of issues, including misalignment between parties' goals or between IT and organizational structure (Wei et al., 2005), a desire to work through technical issues (Wibisono et al., 2019), resistance to new technology, conflict between groups (Latour, 1992), privacy concerns, and a desire to serve clients despite shortcomings of the technology. These may entail discord between developers and users, but not necessarily.

Likewise, concerning the outcomes, both STS and IS generally offer a pragmatic account, and workarounds are seen as having the potential to sabotage an IT project, improve its performance, contribute to its development, and provide feedback for developers (Alter, 2013; Röder et al 2014; Campbell and Grimshaw, 2015; Bhattacharjee et al., 2018; Latour, 1992). Researchers identify that workarounds can have positive and negative outcomes, such as allowing physicians to treat patients better or slowing the adoption of new technologies (Blijeven et al., 2019). In a paper central to the first approach, Cioborra (1991) coins the notion of tinkering, which he uses to describe the innovation of firms at the grassroots level with artifacts and the success many innovations have when adapted or produced at this level. Pollock (2005) focuses on how workarounds emerge from the social network around a given technology instead of putting the focus on technology's design as having scripts or mandated uses built-in as emphasized in prior deterministic approaches to design and resistance.

Their work comes from a body of research that sees workarounds as a part of innovation that can be learned from and have substantial implications for the success of technology. In studying a given case, this literature prompts questions like: how do workarounds influence the long-term trajectory of development or the success of a given artifact, and what leads workarounds to be employed? However, Pollock also distinguishes between workarounds that are supported and encouraged and those that are not, the latter of which prompt questions of whether they should be allowed or prevented.

Based on this body of research in STS and IS, this chapter thus seeks to make an original contribution to the literature on both border control tech and workarounds by exploring how these play out in the EUSS

case. I argue that the STS and IS approach to workarounds, in particular its stressing of how workarounds can be a banal part of IT implementation, is underutilized in the study of border control. Drawing on a longer tradition within IS of identifying how mundane subversion and alternative use of IT can contribute to its development, this literature identifies that the migration literature's emphasis on resistance is only one part of the story of IT implementation, and researchers should also seek to document more mundane and constructive aspects of workarounds. Such literature points to the concern that stressing and researching only the negative and conflictual aspects of non-standard use of border control IT systems causes researchers to miss how workarounds can be a normal and even beneficial aspect of innovation within border control IT. What is at stake by adopting a focus from STS and IS in the study of workarounds is that it allows researchers to understand more clearly both the origin of non-standard uses of border control technologies and their contribution to its development.

1.1 Methodology Used for This Chapter

To examine how workarounds are present in the implementation of the EUSS, I explore the results of a qualitative analysis conducted on a diverse range of sources, including interviews, reports, and social media posts. The STS and IS approach discussed above and in Ch.2 would suggest that a greater deal of flexibility can characterize border control technologies like the EUSS than identified in existing policy and legal writing. This chapter delves into a comprehensive qualitative exploration of non-standard use in how people navigated applying for and using the EUSS.

A narrative analysis approach was employed to accomplish this, as described in more detail in Ch.3, which involved closely examining the statements about workarounds in interviews and responses to the report form. Inductive coding was then utilized to identify themes and categories and categorize various statements related to workarounds. Through this inductive coding process, statements and narratives about workarounds were analyzed in greater depth, providing a nuanced and comprehensive qualitative understanding of how and when they were employed.

2. Categorizing Workarounds in Border Control

In this section, based on a qualitative analysis of my interviews, I briefly outline the start of a typology of workarounds that I documented in the case of the EUSS. Qualitative detail is given to this typology in Sec.3-5, and a fuller discussion is provided in Sec.6. Following existing literature on workarounds in IS, I understand these as responses to the problems documented in Ch.5, whether failures internal to the development of the EUSS or the misalignment between the EUSS' design and users' practices, understanding of immigration checks, and existing IT systems for checking statuses. IS researchers have produced typologies of workarounds, categorizing them based on what they respond to and what activity they entail (Lee and Lee, 2021; Koppel et al., 2009; Blijleven et al., 2019), whether they are essential or harmful to an IT system's function (Ferneley and Sobreperéz, 2006); whether they were temporary or done on a routine basis, whether they can be halted, and whether they are strategic (Friedman et al., 2014; Davidson et al., 2021); their "cascadedness, anticipatedness, avoidability, and repetitiveness" (Blijleven et al., 2019, p. 71), and "whether the user is aware of using a workaround (awareness), whether the workaround is an individual or shared practice across users (shared), on what medium the workaround is conducted (e.g., paper or computer) (medium), and whether the workaround is a formal or informal

practice (e.g., part of a defined process or approved or promoted by management or not) (formality)” (Blijleven et al., 2022, p. 1). These typologies can be drawn on in categorizing workarounds in migration control technology such as the EUSS. They broadly emphasize a significant variation of workarounds concerning how they arise, how they are applied, who employs them, and their impacts.

Drawing selectively from these typologies offered by the IS literature and seeking to understand the activities of intermediaries as documented in Ch.6, I apply the following typology to understand the use of workarounds in the case of the EUSS:

- a) what they respond to (i.e., the motivation behind them),
- b) who employs them
- c) and how they contribute to the various goals of the EUSS.

This typology corresponds to my theoretical interest in how the EUSS changed the conduct of immigration status checks in practice and how the problems outlined in Ch.5 were coped with on an everyday basis. Intermediaries are part of the story that I documented throughout my research, and workarounds are another. The typology is listed in Table 1, and a detailed description is offered in the remainder of the chapter, with each section focusing on a group of workarounds documented in the study and who employed them.

Problem responded to	Who? Which actor?	What?	Impact	Contribution to the goals of the EUSS
Status checkers not knowing about share codes	Status holders and status checkers	Printouts and digital screenshots used for proof of status	Allowed people to pass through immigration checks	Non-use of online checking Status checking still takes place
Status holders not knowing about share codes	Status checkers	Requesting printouts and digital screenshots for proof of status	Allowed people to pass through immigration checks	Non-use of online checking Status checking still takes place
Interoperability issues between job application system and EUSS	Status holders	PDF document, either with share code or with a screenshot of V&P, uploaded to job application	Allowed people to pass through immigration checks (potentially)	
Not owning an iPhone	Applicants	Borrowing phone	Individual was able to apply	Positive contribution, more

				people able to apply for the EUSS
Not having an email account	Applicants	Borrowing an email	Individual was able to apply, but risks losing access to the borrowed email account or being exploited by the person or organization from whom it was borrowed	Positive or neutral contribution, more people able to apply for the EUSS, but presents risks for the applicant
Not understanding eligibility of self or family members	Applicant	Information shared by/obtained from informal contacts or civil society	Individual potentially able to apply	Positive contribution, more people able to apply for the EUSS
Not understanding how to apply Gov.uk and helpline not providing adequate information	Applicant	Information shared by/obtained from informal contacts or civil society	Individual potentially able to apply	Positive contribution, more people able to apply for the EUSS
Perception of the EUSS as insecure	Applicant	Applying for citizenship	Fewer people with status under the EUSS; more EU citizens with a potentially secure status in the UK; more naturalized British citizens	Negative contribution, people decide to not keep status under the EUSS
Perception of status checks under the EUSS as excessively burdensome	Employer	Not checking status of EU citizens		Neutral contribution. More people are able to work. However, as this is informal and unregulated

				work, potential for exploitation.
Share codes not working	Employers	Printouts used for proof of status	Allowed people to pass through immigration checks	

Table 11. Workarounds Found in this Study.

Additionally, I want to highlight a range of technical fixes to the EUSS which, while one might consider them workarounds in the sense that they are strategic responses and modifications by developers in response to a misalignment of the system with their goals, they are somewhat different than those discussed above. Because these activities and modifications to the EUSS demonstrate the flexibility of the system and the amount of learning that was taking place during its rollout, I consider these within the category of workarounds. However, I recognize that the reader might treat them slightly differently – for instance, as responses to workarounds (see Hyysalo, 2006) – and these might also be referred to as developments of the system, iterative design, hacks on behalf of the government to respond to difficulties, and efforts to integrate the EUSS with other systems.

Problem responded to	Who? Which actor?	What?	Impact	Contribution to the goals of the EUSS
Border guards requiring too much time to check share code	Government	Use of readers at airports	Allows faster and less cumbersome immigration checks at borders	Positive contribution
Share codes expiring after 90 days	Government	Some departments able to check status without the use of a share code	Allows departments to take longer to check share codes without needing to request new ones	Positive/neutral contribution
Covid-19 locks certain people out of UK	Government	Extension of permitted time outside of the UK	More people potentially able to apply	Positive contribution, more people able to apply for the EUSS

Court case ruling regarding Pre-Settled Status and reapplying for Settled Status	Government	Automatic upgrade of some people’s Pre-Settled Status to Settled Status using automated checks of HMRC records (Expected)	Pre-Settled status holders do not lose their right to stay in the UK due to failing to reapply (Expected)	Positive contribution, more people able to apply for the EUSS (Expected)
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Table 12. Workarounds Used by Government Found in This Study.

Based on these general classifications, and to discuss them in qualitative detail the rest of the chapter, I group some of these workarounds based on who employs them (rather than, for instance, type of workaround or motivation). Doing so enables locating workarounds in the dealings of different groups of people, their interactions with the EUSS, and how this shapes the development and implementation of the technology. This classification follows from the discussion of support networks in Ch.6. It furthermore builds on the multi-actor approaches to studying migration control systems and infrastructures discussed in Ch.2.

3. Workarounds by Applicants and Status Holders

In this section, following the previous classification of workarounds by who undertook them, I look at how applicants and status holders employed workarounds in their use of the EUSS. These workarounds include using printouts and screenshots to get authorization for work, renting, and travel and rejecting the EU Settlement Scheme (EUSS) by applying for a different immigration status. These workarounds are documented in more detail throughout the section, showing how they were understood by people employing them and the kind of contribution they appeared to have to the development of the EUSS. Overall, the section seeks to show that this study found that people proved their status under the EUSS in a range of ways that were not prescribed by the system itself. As I document, these sometimes came via intuition (e.g., it seemed like a better thing to do), via proximity to pre-existing methods for checking statuses (e.g., people were more accustomed to using physical documents than online ones), via encouragement from status checkers or intermediaries (also see Ch.6) such as employers, the helpline, or online support groups.

3.1 Printing a Digital Status

One of the most common workarounds I encountered in interviews with EUSS status holders was printing either a screenshot of their status on V&P or the letter from the Home Office confirming granting of status and using it as a pseudo ID card. Often, complainants reported folding it and keeping it in their wallet – almost as if carrying a BRP. Doing so was explicitly disavowed by the Home Office, which listed on its letter that it was not proof of status and in their guidance that checking such a letter was not a valid immigration check. Carrying such a printout was approached by many interviewees, however, as a response to a security issue since many people – especially respondents to the report form – either had

difficulties with V&P or expected such problems.²⁹ Interviewees believed that V&P could not be trusted (either due to personal negative experiences or exposure to those of others, either personally or via media), and status holders needed a backup method of proving their immigration status (a physical document as a backup plan when V&P failed, in the sense of the 3million's Denied My Backup campaign). Some individuals carried this card simply as insurance due to their lack of trust in the digital status. As one interviewee explained about his decision to carry such a printout,

“I personally don't trust the government with the way that this scheme has been working. It's just clear that they just don't know what they're doing and you see so many issues arising like that. You know they, they don't even seem to be aware of, or if they are they're not doing anything about it” (Interview 182).

3.1.1 Printouts for Employment Authorization

In this section, I look at how carrying a printout was used for right-to-work checks. Carrying a printout was also often seen by employers as the default mode of checking statuses since it was reminiscent of the system used for BRPs and more in line with existing practices of immigration checks. In such an approach, as is sometimes the case with Biometric Residence Permits (BRPs), printouts often served as a self-verifying document (i.e., a document that is proof of its own authenticity, see Camp 2004) in which visual inspection of the BRP was used to authorize the applicant for employment. Accordingly, there were cases documented in which employers asked for the letter from the Home Office that applicants received upon being granted status or a screenshot of the V&P system. I documented this in interviews from as early as January 2021, in some of the first interviews of the study. During the pandemic, status holders were often asked to send a screenshot as a PDF file, but they were also asked on occasion to hand their employer a physical copy. For instance, as one interviewee told me:

“When I knew I had some time available, I rang the helpline again. Again, I had to wait a very long time, but then I was guided through, you go into the app and then you click on a few things. Then you can actually see your status and when I had that, which included my photograph and everything, I took a screenshot of that and I sent it to my employer and they were happy with that. So now I've got something. If I ever manage to go to Hungary again and I have any trouble coming back, then I plan to take a photocopy with me, just in case. It hasn't happened yet, I haven't been able to go. And that's it” (Interview 90).

This could be understood as a response to not understanding how the EUSS, namely V&P, worked or finding it out of step with existing methods of checking status. It appeared to be more about familiarity and knowledge than (necessarily) about trust in the EUSS. When V&P failed, screenshots were also used as an unofficial backup plan. While for one interviewee, his employer asked him for multiple share codes sequentially when the first one failed, eventually resulting in successfully proving his status, for others, the printout was used when share codes failed.

²⁹ Speculatively, one might assume that this expectation of problems was occasionally due to the success of media campaigns by organizations like the 3million, which highlighted the error-ridden nature of the scheme.

Additionally, since checking the statuses of employees was not required before July 2021, it was often used as an additional, although unnecessary, way of checking whether employees had applied for the EUSS. While I do not have data from employers about why this was done, requesting proof of status earlier than the deadline was framed by interviewees as done either a) because employers did not know when proof of status was to be requested – i.e., due to a lack of knowledge –, b) because physical proof better suited the HR systems and practices of employers – i.e. because of a lack of alignment between the EUSS and existing practices –, or c) since it was not required to ask for proof before the deadline, employers who voluntarily checked statuses prior to the deadline to ensure that their employees had successfully applied used the route that made the most sense for them. In the third case, it was presumably the case that some employees would have had their share codes eventually checked – either unnecessarily or upon switching roles within the company –but employers had no legal requirement to check the share codes of employees employed before the EUSS deadline. As one interviewee told me, early requests for share codes were generally part of some employers' supportive role (See Ch.6), proactively encouraging and ensuring their employees register with the EUSS to maintain their right to stay in the UK.

Additionally, this often created interoperability issues (see Ch.2) for employers using online application systems. Employers in the UK often require job applicants to provide proof of their immigration status when applying through an online form. In the cases I documented, this involved uploading PDF files of documents evidencing one's immigration status, such as a photo of a BRP or, prior to Brexit, a passport or ID card from an EU country. For people with status under the EUSS, this was not possible. This situation represented an issue of limited interoperability between the EUSS and HR systems companies use. The EUSS appeared, based on interviews and document analysis, to have been initially set up in an independent ad-hoc system rather than an extension to existing border control information infrastructure. A lack of institutional knowledge accompanied this lack of interoperability. I received complaints from status holders that employers using online application forms when asked about share codes, often did not know what they were. This represented the way in which there was both a substantial break in practices and a way in which status checkers simply did not have the information needed to use the EUSS in its intended manner. To understand the use of printouts and screenshots as an alternative to share codes, one might categorize them as a kind of workaround, in which status holders learned an alternative way of using the EUSS in order to pass through borders.

3.1.2 Printouts for Travel Authorization

In this section, I look at how, in addition to authorization for employment, printouts were documented as being used during travel for authorization to enter the UK. Authentication with such printouts was reminiscent of authorization for BRP holders, where a visual inspection of the document often treated it as a self-confirming document. Status holders in this study were documented carrying printouts as pseudo-ID cards when entering the UK, fearing that they would need to show something as proof of their residence to border guards. This turned out to be true, as border guards routinely asked for physical documents from EU nationals. Sometimes, border guards asked for documents that did not exist, such as a BRP issued with the EUSS – which was also documented in the case of banks (Ch.5) – and other times, they asked for a letter from the Home Office, which did exist but was not proof of status. This primarily occurred at external ports. Such printouts were also routinely accepted by border guards. Furthermore, in

addition to printouts, it was the case that some status holders would pull up V&P on their phones so that the border guard could see it. As one interviewee told me,

“I went onto my page on the government website. I logged in, and then I showed him the welcome page that had my picture on it and the paragraph saying that I have Settled Status, he just let me through like this was what I should have done all along. Like as if I should have shown it to him on my phone or downloaded that web page initially. But I knew I wasn’t supposed to do that, and I was supposed to give him the share code. Back when I went to prove to my company that I had settled status, it was super straightforward, nice, and easy. With Border Patrol when they should know all of those procedures, but they didn’t” (Interview 36).

In this case, the interviewee reported that the border guard was waiting to be shown something written that he could use to verify her immigration status. Neither was sure what exactly to use since this was not part of the EUSS, but eventually, she tried logging in to show him, which was accepted.

“You are talking with a guy in a queue with lots of people behind you, and now he's going. Sometimes, of course, it's possible, but if there are not that many people now, they're going to take you to the side and go to a web page and check your status or something like that. But more often they ask you to show the letter, the letter you get when you get Pre-Settled. But it's clear that they are not reading the letter because if you read the letter, you know that you cannot use it. So, it's a little bit of a ridiculous situation where if they actually go in detail it's going to be actually a problem” (Interview 243).

There were also cases of individuals who were explicitly told by the government to carry such a printout of the email or letter. One individual reported having issues updating her status with her new passport, and after the Resolution Centre told her they would fix it; they told her to bring the letter about her status being granted with her when she traveled. This example can be interpreted as a case of the government (or at least some people in it) knowing that the EUSS did not work and encouraging users to employ workarounds. This broadly reflects IS research which documents how managers will strategically tolerate or even encourage workarounds in certain contexts when it is advantageous to the success of a business process or IT system (see Röder et al., 2014).

Similarly, there was one case of an individual who applied for a permanent residence card before applications closed at the end of 2020. He reported being a frequent traveler and not trusting the EUSS as a means of evidencing his status. Even though the PR card expired at the end of 2020, he continued using it and reported border officials accepting it as proof of his status. This was despite official recommendations and the fact that the card was not valid at the time of it being used (German Missions in the United Kingdom. 2023). As he told me,

“I will still be showing this [laughs and shows a permanent residence card to the camera], because people just don't know that it's, it's not valid anymore. First, I got settled status, and then I got this, only for traveling, [laughs] yeah, because I knew I would be getting this question, and I did. Yeah, that's the only reason why I got it [laughs]” (Interview 73)

In this case, the interviewee got and obtained an immigration status that was not valid because he expected that it would better align with the expectations of border guards. This is reminiscent of IS literature on the installed base, which shows that problems with new IT and the ways people resolve them are often connected to fitting new IT to better align with the installed base of other IT systems and work practices (Hanseth and Lyytinen, 2004). This was definitely the case with this interviewee, which speaks to the extent to which status checkers – border guards in this case – were habituated to receiving physical proof of status. The interviewee proactively (and correctly) expected this poor alignment between the EUSS and existing status-checking practices, and in response, he employed a workaround that aligned the evidence (albeit legally, this was not evidence) he provided with what status checkers expected.

Finally, there was another case in which a traveler described piling all of this paperwork in front of the border guard until he finally accepted that he lived in the UK. This was a situation in which the traveler both used the printout as others had done but also demonstrated the improvisational and negotiable character of status holders' interactions with border guards in this early stage of the EUSS' implementation. Because many border guards did not know what they were doing and the EUSS poorly aligned with their existing practices (see the discussion in Ch.5), it was not always clear what was going to be accepted.

I would say OK, So what I ended up doing was with the NIN number. And with the and with a bill, it was enough, but I was prepared to have the letter from the government and some bills because I knew that this could happen so. But I also showed him that I have a contract. And work on that or something like. But I started to pile up stuff there until he said that it was OK. Yeah, and the problem was that after that, he kind of apologized because he said so. I'm sorry. I need to. Because it was like a little bit of. Because he clearly didn't know what he had to actually he was demanding like a credential or something. I told him there was no credential. At all. So, the only thing that I have are these things to prove to you that I am living there and, and also, I told him like OK but there's no credentials and I've been granted status, right? But they don't give you anything and any way that I can ask for it anyway. If I get there. So, what I showed him was that I had been living in the UK for a long time. That is what I did and he said OK” (Interview 214).

These situations showed that there was a range of documentation that was used and accepted for proof of EUSS status when one was traveling. Instead of finding cases in which people provided a share code to a border guard and this did or did not work – a simplistic case that might be predicted if technical failure was the primary consideration rather than alignment of practices –, I found cases in which people used

1. Printouts of the letter from the home office confirming their status
2. The profile page on V&P pulled up on their phone
3. Printed copies of the profile page on V&P
4. Alternative documentation, such as rental contracts, bank statements, and employment contracts

Such a range of documentation used to prove status when traveling, as I will discuss in Sec.7, demonstrates a great deal of flexibility in how the EUSS was used on a day-to-day basis.

3.2 Opting Out, Rejecting, or Subverting the EUSS

In this section, I briefly discuss another commonly reported approach: opting out or rejecting use of the EUSS. Rejection of new technologies is something widely documented in both migration studies and STS (Laumer and Eckhardt, 2012) and was also seen here in the case of the EUSS. This kind of behavior has been documented, for instance, in the case of people applying for citizenship. This approach was mostly reported as being done as a response to the perceived insecurity of the EUSS. There were two aspects to this: first, there was a perceived insecurity of the EUSS due to its design. Second, there was a lack of trust in any immigration status the government offered to EU citizens. Finally, there was the case of using the EUSS as a visa, in which people adjusted their timelines of moving to the UK to align with the EUSS, ensuring they were able to get this more preferable immigration status instead of needing to apply for, for instance, a work visa.

This section explores these cases in greater detail. I show that the story of the EUSS was not simply one of the EU citizens and their family members living in the UK applying for the EUSS in order to preserve their rights but a much more flexible one in which the scheme was used in a range of ways in order to secure people's rights in the UK. This is broadly in keeping with how STS and IS researchers working on border control technology approach projects like the EUSS, understanding them as a lot more flexible than typically portrayed by policymakers (Glouftsiou and Scheel, 2021; Trauttmansdorff, 2022). However, these workarounds largely have to do with how the EUSS works as a legal status rather than an IT project and do not provide insights into how workarounds were productive or contributed to the development of the project.

First, there are cases of people who used the EUSS as a vehicle to what they saw as a more secure status, namely British citizenship. As soon as such people accumulated the necessary time to apply for citizenship based on their Settled Status, they did so.

“Just recently, I have decided to apply for British citizenship. Even though I have Settled Status, I'm concerned about, you know, potential unilateral decisions by the British Government, that they will strip out the rights I have” (Interview 221)

This quote reflects the broad motivation that informed decisions apply for British citizenship (or in other cases, to leave the UK) among interviewees. The British government, as the administrator of the EUSS and the legal status it granted, was seen as an untrustworthy actor. As a result, the EUSS as a project was seen as unstable and subject to changes at the behest of the Home Office. Another interviewee explained:

“The fact is that I can't rely on this government to respect its promises. Also, if another government is elected, they can change it. The European Court of Justice is on the sidelines and probably wouldn't intervene. So, I don't think this is the final version of the agreement or Settled Status, and I think the government might change it someday. So, those things concern me a lot, yeah, I don't trust the UK government, that's really what I'm trying to say” (Interview 3).

This interviewee said that he was disoriented by the process of having his FoM rights stripped, which permanently damaged his trust in the British state. Another interviewee, in response to a case of the NHS asking him to provide physical proof of status (see Sec.3-4) said that he would apply for citizenship since he was so disoriented by the whole implementation process of the EUSS:

“In only 10 days I have already to do a lot more things than the normal if I can say this word, as a British citizen and will have to do to accomplish the same things and I think this is just amazing. I really think that it's just amazing how the NHS, which belongs to the state. I really think it's just amazing that they literally ask you to do one thing that the website from the government says not to do. I really think this is amazing” (Interview 240).

In this case, the interviewee encountered one of the problems of status checkers asking for incorrect documentation as detailed in Ch.5, and in response, she decided that her desired course of action was to abandon the EUSS for what she perceived as a more secure immigration status. This decision was reflected by others, who affirmed that the EUSS changed their life plans and caused them to become British citizens, even if they did not want to.

“I am getting more stressed and annoyed and disappointed. As soon as I get the chance, I am going to apply for a British passport, because I've had enough of this. I never wanted to have dual nationality okay because I don't think you should have to have dual nationality but the way things are now, I think the best way is to do that” (Interview 231).

The requirements for citizenship were fairly low upon having received Settled Status, which legally facilitated using it as a way out of the EUSS. While these requirements were often criticized (see, for instance, criticisms of the Comprehensive Sickness Insurance requirement (the3million, 2023), the high cost of citizenship applications, and rules prohibiting dual citizenship for nationals of certain countries), many people were able to apply for citizenship a mere year after obtaining Settled Status (Citizens Advice, 2023). This created an opt-out for people who wanted to secure their status but did not trust the EUSS for technical or political reasons.

Finally, there were cases of people who chose not to apply for the EUSS and instead live in the UK illegally. Unfortunately, I was not able to speak directly with such people, so I do not have the data required to speak in depth about this issue.

4. Workarounds by status checkers

This section looks at cases of workarounds used by status checkers. As discussed in Ch.4-5, there was widespread difficulty among status checkers in understanding the requirements for proving the right to work using EUSS and also generally how, when, and whether the immigration statuses of EU citizens should be checked after Brexit. Interviewees explained that the rapidly shifting landscape of immigration rules, guidelines, documentation, and technologies led to confusion among employers, especially SMEs, around how the post-Brexit immigration system worked and how EU nationals fit into it. In addition to being a way in which they could retain staff post-Brexit, the EUSS represented a break from existing practices of immigration status checks and also occasionally presented employers with technical errors,

especially at the start. In response to these challenges with the changing post-Brexit immigration system, I documented the following workarounds undertaken by status checkers. These included asking for documentation that was not part of the official route for checking statuses described in Ch.4.

One workaround in this study is when employers would ask for physical proof of status to compensate for their lack of knowledge of, lack of competence with, or poor functioning of, V&P. As discussed in Ch.5 there were cases documented in which people thought there were physical identity cards issued with the EUSS, or had never heard or share codes. The first case, as documented above, was when employers requested proof of status in the form of the letter from the Home Office. As one interviewee told me about his experience with having his immigration status checked by his university:

“So, what I did is to upload information, even if they say in the letter this letter is not proof enough, I took a snapshot of everything and I uploaded it and they were happy with that. Even if you say, this is not proof, they were happy and I was shocked, because you, you know, universities should be more up to date, because they deal with a lot of international students but, you know, they accepted it. I don't feel like they discriminate against us because they don't want to hire us, it's because they don't know” (Interview 71).

In this case, he was surprised that even the university, which was a large institution employing a large number of non-UK nationals, would struggle so much to understand the EUSS and would thus rely on a workaround like requesting a physical document.

In addition to asking for physical proof of status – in the form of documents that did not exist or in the form of screenshots or the letter from the Home Office – there were cases of internal workarounds. As stated above, none of these workarounds are necessarily legal, in the sense that they did not comply with requirements for immigration checks, but they compensated for the inability of the EUSS to meet the needs of employers and thus enabled the hiring or retaining of EU citizens.

There were cases in which workarounds were done by relying on internal records. There was a case in the higher education (HE) sector in which an EU citizen was undergoing a Right to Work check for a new job in a different department and could not provide a share code due to V&P not returning one. Her work needed a way of proving her rights, but she could not generate a share code using V&P, so they asked her previous employer for signed copies of her RtW documents. This was only possible because she was moving from one department to another in the same university. While it involved bypassing the official V&P route because it was not working, it provided the employer with an indication of the employee's RtW and also allowed them to hire them despite issues with V&P. One might speculate here about the motivations behind workarounds for employers. Here, it seems that the employer attempted to avoid the risk of either not being able to employ the employee or running afoul of the Home Office by using internal records rather than V&P.

There was another case in which an employer was not able to tell the date at which an applicant needed to apply for Settled Status from Pre-Settled Status, so they asked their employee for their Confirmation of Application (CoA). This was in order to see when the five years of Pre-Settled Status started and ended.

This case was one in which the status checker wanted information that V&P did not provide and took steps to access this information.

5. Supply-Side/Developer Workarounds: Development of Supplementary IT Systems

This section looks at workarounds employed by the government in developing the EUSS: specifically, the government's development of supplementary systems and the (better) integration of the EUSS with wider e-government service delivery. In addition to workarounds employed by status holders and checkers, the government appears to have taken steps to cope with the misalignment between the EUSS and existing practices and its at-times poor functionality. These fixes included technical fixes outside the normal architecture of the scheme, modifications to the policy architecture, and fixes to the scheme's own architecture. I consider such fixes as within the category of a workaround since the EUSS was initially separate from other databases and work practices, and steps were made by the government to integrate them – for instance, adding a new data stream was gradual.

However, a word of caution should be given. While through my interviews, I was able to get evidence of new systems developed in response to these issues, I cannot find evidence of these in official documents about the EUSS. I therefore cannot verify the findings presented in this section in official documentation, and they are only based on the experiences of civil society employees, status checkers, and status holders. This means I cannot identify the timeline of these fixes, whether they are still in place, their motivations, or how they worked on a technical level.

The dominant framing of the EUSS in existing literature is as a stand-alone immigration system with negative consequences for vulnerable users (See Ch.2). In contrast to this framing, interviewees tended to frame the issues of the EUSS as deeply intertwined with other legal and IT systems, such as the family migration system, the records access systems at airports, application processing within various government departments, e-gates, and the Employer Checking Service (ECS). Issues related to poor interoperability or frictions between these systems and processes often caused issues for people. Status holders documented their experiences with border guards and caseworkers, highlighting such frictions. The following problems, highlighted in Ch.5, were addressed in workarounds by the government: 1) border guards' need to check immigration statuses on the spot was at odds with the EUSS' method for doing so (i.e., online and asynchronous, Ch.1), and 2) the dysfunction of other departments led to delays in checking share codes.

In response to these problems, the EUSS was revealed to have prompted the development of supplementary IT systems in various government departments. Interpreting these developments via STS/IS research on workarounds and how they are banal parts of IT implementation is helpful to highlight how the EUSS worked in practice. It also allows one to identify how the EUSS functioned not merely as a stand-alone IT system but changed the wider UK border infrastructure. Such an interpretation allows one to see how the EUSS' success and failure at various points were not simply the results of the scheme's design but rather of its relationship to developments in other systems across government departments.

Border-crossing was the first area that prompted the government's further development of the EUSS. In addition to the issues documented above, at the beginning of the EUSS implementation, there were issues of how the EUSS interacted with COVID-19 policy and the existing work routines of border guards. Due to COVID-19, proof of residence was asked for from travelers to the UK in addition to proof of immigration status. Especially at the start, the EUSS was not generally recognized as proof of residence by border guards. Bank statements, rental agreements, etc., were asked for instead. This created a situation in which many individuals struggled to provide evidence of their right to live in the UK when asked by a border guard. Furthermore, as noted above, status checkers often wanted to see immediate proof of status and could not accept a share code.

In 2021, I documented a system introduced at the border for checking statuses. Interviewees were asked to give their passports or ID cards to border guards, who would quiz them about what was visible on a screen. This system apparently displayed the individual's identity and the records, although it is unclear how access to these records works in terms of data management (see the description of UK border IT in Ch.2). As an interview with a civil society employee reported:

“When you arrive there at the UK border, and I don't know if they're checking every single person, I assume so because they take the passports and they look at them, they scan the passports now so when they scan the passport, they will see everything. They see everything. For example, with a European person, they see straight away if they have status or not. They will see as well if he was refused for status or if he had a criminal record or a pension. They will see every single step of what you are doing with your passport in the UK, or if you applied for any immigration status” (Interview 66).

However, these readers, like the rest of the project, were prone to errors:

“When I got to the border guard, he was very rude, and he took my passport and looked at his computer and immediately told me I didn't have Settled Status, which is obviously not true” (Interview).

The implementation of these readers suggests a break from the standard procedure for authentication through the EUSS using V&P – i.e., someone logging into a website, getting a share code, and sending it via email (See Ch.1). However, that break makes sense given that the encounter with a border guard – despite typically being preceded by the advanced screening of a passenger – is immediate, face-to-face, and involves some amount of discretion (See Ch.2). The time it takes to log in, generate a share code, and send it to a status checker – not to mention the need to specify a recipient for the share code – is at odds with how border checks are typically done, and the expectations of the people involved in that process (see Luger and Sellen, 2016). As discussed in Ch.2, without a substantial change to how this interaction usually takes place, it would be cumbersome to verify online when confronted with a border guard, and the EUSS' use of remote authentication for immigration checks was at odds with time-limited and face-to-face interactions. Interviewees from before the implementation of this system reported having to pull up their V&P records on their phones and facing issues with airport Wi-Fi and their web browsers or alternatively printing out screenshots of these records. The kind of chaotic experiences this provoked made it clear that an alternative was required for airports – something that the Home Office clearly

recognized in 2021. This realization required the development of a complementary means of immediate, face-to-face authentication in the way of passport scanners and access management for EUSS records.

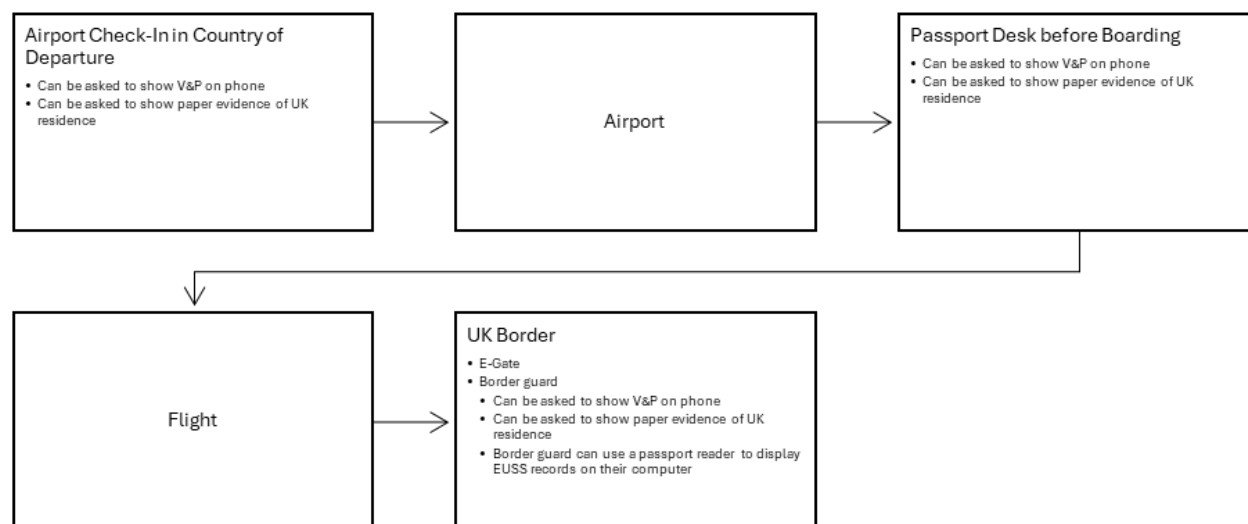


Figure 9. Observed Ways of Passing through Border Control.

The same was played out with the expiration of share codes and how this interacted with the backlogs at the DVLA, HMRC, and DWP. Applicants for driver's licenses, Universal Credit (UC) (the British version of welfare or social insurance), European Health Insurance Cards (EHICs), and National Insurance Numbers (NINos) reported that they would send in a code with their application and be forced to wait several months for a response, which would then tell them that they needed to send in another share code. As one interviewee explained:

“I tried to apply for the European health insurance card. I applied in December, and they wanted this share code to prove settled status. So, I sent them the PDF file with my share code and date of birth so they could log in, but they didn't reply until two months later, so they just replied just two weeks ago, saying that they had a problem with a code and then my details are not the same as the government says, and they needed me to send them another code. But obviously, this is true, the codes expire in 30 days, so if they check it two months later, they can't they cannot access anything. So, I had to send another code by email, and it's really frustrating since they should know that that code is only valid for 30 days, so you have one month to reply, I understand that we are a huge amount of people trying to apply for that. But 30 days is not enough for them, then. They shouldn't send that email to so many people if you're not allowed if you're not able to reply that fast” (Interview 79).

In another case, an applicant for a driver's license reported that she was asked to send in a second share code after her application took more than 30 days to process.

“The online form didn't accept my husband's passport number, so we clicked the option for not having a passport and submitted the form. Weeks later, we received a paper form that required us to fill everything out again and provide his British driver's license number, which he didn't have, since he only has one from back home. We sent his passport with a share code to prove his immigration status. Unfortunately, it took two months for the DVLA to process our application and the share code had expired. We had to generate a new code and resubmit the form. The entire process was frustrating and slow and took us so long! This was on top of all of the delays with the postal service” (Interview 133).

As identified here, the 30-day expiry of share codes led to issues accessing social services, with case workers requesting further codes once applications were started. For some applicants, this led to extended waiting times for what they had applied for, as well as extended periods of time without essential documents such as passports. This problem led to a workaround within the government, namely the development of complementary systems to check statuses within government departments. According to one interviewee, a lawyer and policy expert with connections to the DVLA, these systems were used by default without the need for share codes to be requested. DWP, HMRC, and DVLA. Through interviews analyzing individuals' interactions with the EUSS, it was observed that although it was not initially incorporated into other e-government systems, it ultimately became integrated.

However, it is not clear what the future of these complementary systems will look like. According to a statement about the points-based systems, airports may be asked to implement pre-authorization for travelers (in addition to existing checks of airline records by the government via the E-Borders project), which may include checking EUSS records. In this case, fully asynchronous authentication for travel might be possible since EUSS records might be available to border agents via the UK Electronic System for Travel Authorization (ESTA) equivalent. However, as Boswell and Besse (2023) document in the case of the E-Borders program, it is unlikely that such a system would cover all travelers or be delivered in the foreseeable future. For this reason, it is not clear to what extent this represents a temporary stopgap or a longer-term compensatory mechanism.

However, as one interviewee did, it is possible to speculate that this is all part of the strategy of the government to link up government departments and use this to surveil people, providing interfaces between Home Office databases and those at other departments. As one interviewee said, “The digital status is the most dogmatic thing of the scheme. It offers the ability to link up government departments, which is the intended direction of travel they would like to move in, and there's, of course, a cost element, but they also see our government as being more linked up, there's a lot of power in the data, you can really keep tabs on people more than you can without the digital status” (Interview 182). This interviewee went on to explain,

“The EUSS can be just another tool for accusing people of doing the wrong thing (you can see whether people worked, went to school, etc.), it's in line with the existing drive within government to work out how much people cost you as a state. We might start to learn about this

in prosecutions when it's used as evidence. Like will the police have access, and how? There's also a chance the Home Office doesn't know what they're sitting on yet and doesn't quite know what they have and what they might then do with it. However, regardless of what's going on there in terms of motivation, this is just so much info, so the potential for maladministration is so big. It's like the dream of big data, you don't know the opportunities here" (Interview 182).

In this way, the implementation of the EUSS and its integration with the installed base is an ongoing project.

6. Discussion: From Systems to Infrastructures: What is Special about the EUSS?

In this section, I conclude the discussion of workarounds with an analysis of what these findings can say about the implementation of the EUSS. This chapter outlined cases of the workaround being present in the EUSS during the early phase of its implementation. It was shown that there were cases of using the EUSS in ways that better met the needs of status holders, such as printing out or emailing screenshots, using the letter from the Home Office as a pseudo ID card, or using old employment records to infer immigration status. The prescribed use of V&P (logging in and obtaining a share code to provide a status checker with an electronic record of one's immigration status), while framed by government and civil society as among the central features of the EUSS, was found to be only one way in which people checked statuses under the EUSS. As Figure 2 shows, I documented many ways in which status was checked under the EUSS, many of which were not relying on digital technology, such as printouts of the application confirmation letter. While many of these alternative uses were not sanctioned by the government, my findings show that considerable flexibility was tolerated by the Home Office (or, at the very least, that the Home Office did not succeed in cracking down on workarounds).

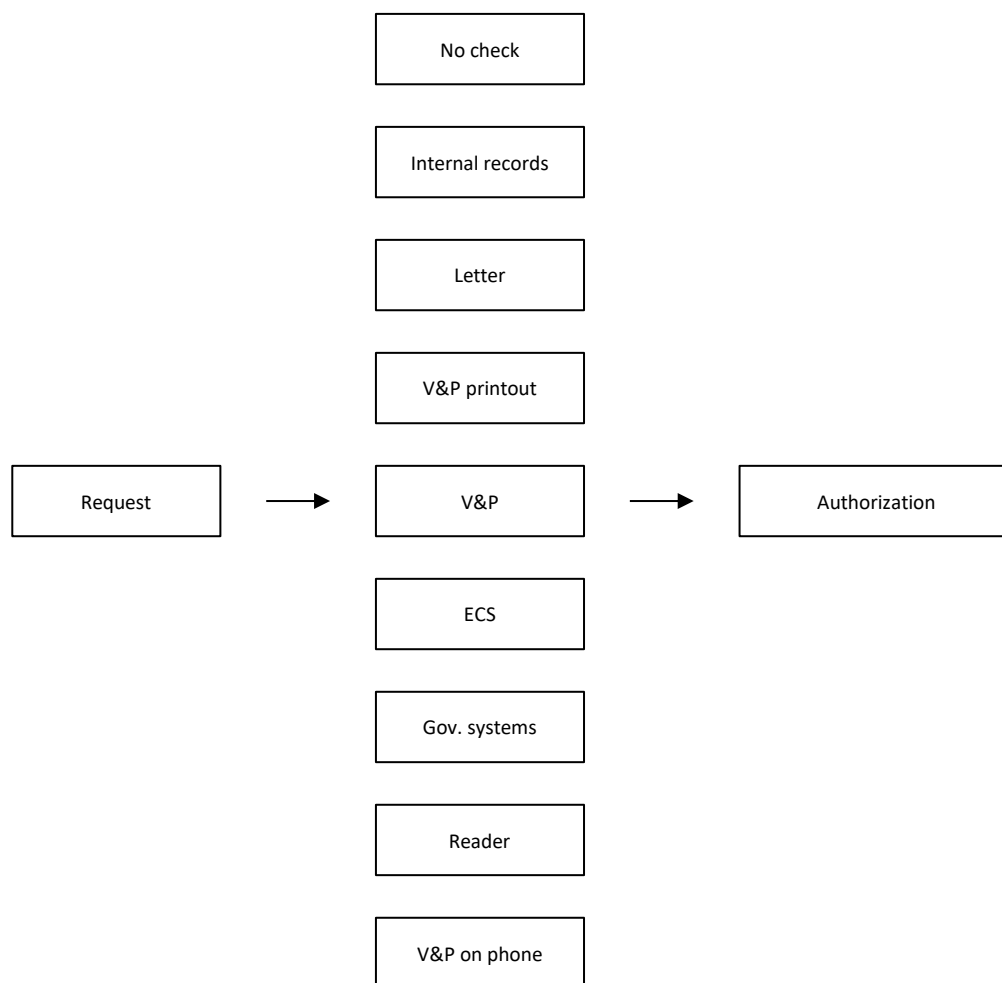


Figure 10. The Many Ways Status Was Documented to Have Been Checked Under the EUSS.

The finding that there were so many alternative means with which statuses were checked furthermore indicates a discussion of V&P needs to take into account a broader set of systems, practices, and infrastructures than just V&P. Despite the framing in existing literature (see Ch.2) as heavily determined by Home Office policy and practice, the EUSS was highly flexible in its use, and a variety of workarounds were present among users. By framing these workarounds pragmatically as is done in the STS and IS literature – rather than the antagonistic depictions offered in the migration literature – I argue that researchers can better understand the openness of migration control IT projects to change, the considerable flexibility both allowed by the Home Office and resulting from issues in uptake, and how these IT systems impact their users on a day-to-day basis. The STS and IS literature on workarounds can help to understand the adoption and impacts of the EUSS because it is more nuanced and pragmatic in how it approaches them, treating them as potentially normal parts of IT implementation and potential contributions to its success. Workarounds can be adversarial and part of how people resist migration control (e.g., as part of the “cat and mouse game between the state and irregular migrants” documented by security researchers (Broeders and Engbersen, 2009, p. 1592)), but they can also be an important part of how technology is implemented and adopted. In this sense, workarounds are part of the process of infrastructuring, or the long-term construction of digital infrastructure (Pelizza, 2023a). What I

documented in this chapter was a process by which problems the EUSS had at an early stage were worked around in order to allow the day-to-day functioning of the scheme. By taking such an approach, one is able to avoid an overly simplistic or confrontational interpretation of non-standard uses of migration control IT.

This flexibility in use was accompanied by changes to the technical structure of the project. The EUSS was also shown to have led to, or been associated with, the development of interlinked systems. Interviewees identified that systems were set up in order to check the statuses of individuals in other government departments. These included readers at airports and data access for other government departments that did not require the use of a share code – an example of what was called joined-up e-government in Ch.4.

Suppose one thinks of the EUSS via the language provided in existing legal and policy literature. In that case, these cases of non-standard use seem exceptional or even potentially represent a failure of the government in their design or implementation of the EUSS. However, the cases I documented appeared widespread enough and were treated by applicants and status holders as ways of accomplishing the immigration checks mandated by the government. In other words, they were means by which the EUSS was made to work in the short-term, despite its limitations (Willermark et al., 2021). Furthermore, rather than observing the government crackdown on these workarounds, I observed them steadily throughout the period of the study, and the government even modified the EUSS in response to the needs of departments that sparked the workarounds. So, how should one understand all of this?

I argue that this is explainable and predictable if one understands the EUSS via the language of STS and IS research on IIs or if one adopts an infrastructure perspective on the EUSS. Such an approach, as discussed in Sec.1, identifies that workarounds are a normal and expected part of IT implementation and can be part of working out the design in practice, especially as people struggle to work through new IT systems in complex bureaucracies (see for instance work on automation of welfare systems (Currie and Podoletz, 2023a; Currie and Podoletz, 2023b). This is what scholars, in particular those applying the II perspective to border control identify as the process of infrastructring, or the gradual process of constructing border control infrastructures (Pelizza, 2023a). This process, I found in the case of the EUSS (see Ch.4), was replete with technical failures and failure to integrate the EUSS into existing IT and practices of checking immigration statuses. Workarounds in this case, I found, responded largely to this failure in the short-term to align the EUSS with other mechanisms of immigration status checks – put differently, the early failures to integrate the EUSS into wider border infrastructure. Furthermore, following the literature review above (see especially Alter (2013) and Blijeven et al. (2019)), one might classify the workarounds in this chapter based on a) their level of cooperation vs resistance to the project, and b) their use by institutional vs individual actors. This classification follows, based once again on the type of actor and on the extent to which the action furthered or hindered the development of the system.

Supporting project goals	Subverting project goals
--------------------------	--------------------------

Government	Development of complementary systems	NA
Status checkers	Use of printouts or screenshots to check employee records Using old employment records	Filing valid applications on behalf of ineligible people for a fee Employers not checking immigration statuses
Applicants and status holders	Use of printouts as pseudo-ID-cards	Moving to the UK in order to apply for the EUSS

Table 13. Classification of Workarounds.

The core part of this classification is that the workarounds that I documented in this study can be both positive and negative for the development of the EUSS. In the case of printing V&P or the letter from the Home Office, they highlighted gaps in the system (some of which were later addressed by the development of complementary systems) and allowed immigration status checks to be carried out using it. This observation suggests to researchers and practitioners working on IT systems for migration control that non-standard uses might not be harmful to system development but instead often be part of it. As Trauttmansdorff and Klimburg-Witjes (2020, p. 1) write, “Various ‘agents of infrastructuring’, from policy officials, agency representatives, maintenance and repair workers, to private industry actors, must here be continuously aligned, molding and altering infrastructure, to govern these machineries of inclusions and exclusion.” Understood as critical parts of the process of adoption of new technologies –, or more broadly, of infrastructuring border control – workarounds like the ones I observed in this study can be vital parts of the adjustment underlying the introduction of new IT. Critics and independent researchers should also consider this point, realizing that resistance and workarounds might help get to a stage where new technology can be used effectively on a day-to-day basis.³⁰

³⁰ While this might seem counterintuitive in studies of border control, one outcome of this argument is that governments developing new IT systems for border control might be well-suited to take lessons from the extensive participatory design and co-design literature (see the edited collection by Hyysalo et al. (2016)).

Finally, interviews showed that some EUSS status holders decided to apply for citizenship based on the perceived unreliability of the scheme. This is one explanation of a trend found elsewhere of spikes in EU citizens applying for British citizenship after Brexit (Clifton-Sprigg et al., 2023).

However, there are some limitations to the findings presented in this chapter. First, it is unclear whether the Home Office knows about these workarounds and how they are discussing and responding to them since I did not speak to government officials or developers in this project. Second, I cannot present to what degree the problems and workarounds discussed in this study are still going on and whether some of the problems addressed have been addressed since I only have data until the end of 2022. Things may have changed after the end of the study, and additional research might help to understand further development of the project.

Chapter 7. Conclusion and Discussion:

Summary

In this closing chapter, I provide a brief conclusion to the thesis and a discussion of its findings. First, I briefly recap the findings, key takeaways, the thesis's contribution to STS research on border control, and my answers to the research questions. Second, I discuss why studying a project like the EUSS matters not merely to the legal and policy practitioners who have studied it thus far but also to researchers and scholars interested in information technology. Finally, I reflect on the process of doing this research and authoring the thesis, and the limitations of the study. Overall, the thesis was one output of my doctoral research and sought to highlight key concerns about EUSS implementation from an STS perspective.

1. Summary of Contributions & Policy Implications: Coping with Change

In this section, I recap the findings of the thesis, their implications for discussions of the EUSS, and my answers to the research questions set out in Ch.1. Much of what I documented and present here involves how people came to cope with the EUSS, including through non-standard use and reliance on support networks. The three empirical chapters presented different aspects of the story, but I argue that they can be considered together as a process of learning or coping with change. By examining this process, the thesis has sought to provide a complement to the existing literature on the EUSS and internal border control more generally, showing how they work in practice.

The study started with an engagement with existing literature on the EUSS and other border control IT, which I argued could be understood as a kind of design criticism. This literature had a range of strengths (mainly its careful policy, technical, and legal analyses of the EUSS), but I argued that further work needed to be done to examine how people were using the EUSS on an everyday basis.: in particular, given its focus primarily on choices made by the government about the EUSS versus how the EUSS was integrated into various other processes in the government and the private sector. While helpful (especially for holding the government to account in their development and deployment of these projects) I argued that such literature might be complemented by looking pragmatically at the day-to-day implementation of border control IT. In charting such an endeavor, I drew on the work of scholars at the intersection of STS and critical security studies. These scholars were identified as having a range of concepts at the core of their thinking, which might assist in understanding the EUSS. Among these were social learning, interoperability, innovation intermediaries, infrastructures, and workarounds, which I identified as potential avenues to look at the EUSS.

Based on my review of the literature, I developed the following research questions: 1) What problems did people have applying for the EUSS and using it for immigration status checks? 2) What sort of intermediaries emerged to support the implementation and adoption of the EUSS and what were their activities? 3) How did applicants and status holders employ workarounds to respond to problems when

using the EUSS? 3.1) How can the concept of workarounds help to understand the implementation of the EUSS? 4) How can the experience of Brexit and the EUSS inform the application of STS concepts, such as innovation intermediaries, workarounds, and social learning, to expand upon existing accounts of border control technology in offering nuanced examinations of how these technologies are adopted in everyday contexts? The first three of these questions correspond to the three empirical chapters of the thesis, and the third corresponds to my interest in how STS theories can help researchers better understand border control IT. The questions furthermore address my overarching interest in the everyday functioning of the EUSS, inspired by what I identified as a gap in the literature and my interest in the mundane use of migration control information systems. My answers to these questions are outlined in the next four subsections, along with my reflections on these answers.

1.1 Research Question 1: Design Criticism and Social Learning

In seeking to answer RQ1 (*What problems did people have applying for the EUSS and using it for immigration status checks?*) I found what was initially expected in my review of the existing literature on the EUSS: that the project often worked very poorly on a technical level, causing concrete harm in terms of hindering status holders' access to job opportunities and public services. However, I also found a range of problems that people had when relying on the integration of the EUSS with the IT and practices of status checkers. Namely, I found that various people, including employers, applicants, status holders, and even border guards, struggled to align the EUSS with their existing practices for checking status. Status holders were routinely asked for documents that do not exist, and border guards and HR officers did not initially have an easy way of accepting proof of status from the EUSS, instead wanting physical documents. It was certainly true that the EUSS worked poorly on a technical level, but part of what that means in this case, this thesis found, that it was a technical break from what IS researchers have called the installed base (Rolland, 2000); that is, all the existing practices and systems that need to be aligned to work with it. This answer to RQ1 supports existing research on IT adoption in STS and IS, namely research which demonstrates the need for adaptation of professional practices and existing IT in response to new systems (see Hanseth and Monteiro, 1997).

While programs like the EUSS – and others in the UK and EU, such as EURODAC – have been depicted as technical outcomes of repressive legal frameworks (Bigo, 2014), and while I do not wish to disagree with this framing given the extensive harm to users documented in this thesis, they are also new technologies that need to be coped with and which need to be fitted into existing infrastructures. Such processes of coping and adaptations, looking at the EUSS shows, create a wide range of problems for migrants, businesses, and governments alike. While previous research has found such processes of social learning in information technology in general, this thesis has shown that they are also present in a case of border control IT. Alongside poor design choices and technical architecture – which were very much a problem and for which evidence was found – concerns were identified as arising from the wider immigration system, the interaction between the EUSS and other bureaucratic processes, and were often responded to by unexpected uses of the EUSS by status holders and applicants and responses from intermediary actors.

The findings showed that the EUSS was a remarkably tricky project to get right since so many of its problems arose from the difficulty of aligning it with the installed base – so, in theory, the Home Office

could have flawlessly executed the EUSS from a development perspective (i.e., no failing share codes) and it would still have caused problems because it has to interact with other systems. While much of the literature on both the EUSS and other migration control projects has correctly identified their harms as a result of draconian state efforts to control migration (see in particular Webber (2019), Bigo (2014), and Broeders and Engbersen (2009)), I want to highlight this other dimension of border control IT, which I have also highlighted elsewhere in a study of the UK E-Border program (Boswell and Besse, 2023). Migration control IT is not a domain immune to the constraints and challenges identified in research on IT deployed in other contexts (see, in particular, Ciborra and Hanseth, 2000).

1.2 Research Question 2: Intermediaries and Supporting Interactions with the EUSS

In response to the difficulty aligning the EUSS with the installed base described in the previous section and in answering RQ2 (*What sort of intermediaries emerged to support the implementation and adoption of the EUSS and what were their activities?*), the thesis also found that the EUSS was responded to by a wide range of intermediary actors who assisted people in coping with the changes it created.

Throughout the thesis, I found a large group of people and organizations had emerged to assist people in dealing with the EUSS; these intermediaries, as I documented, were occasionally organizations dealing with the EUSS as one of their specific goals, but occasionally they were simply motivated individuals who went out of their way to support people. From lawyers and HR personnel sharing information about the EUSS to civil society groups specialized in Brexit and the EUSS, groups of friends, and online forums and communities, there was a mobilization of a range of groups to cope with the immense change that the EUSS presented. People organized seminars, answered questions about eligibility, worked through technical problems, provided legal guidance, taught status checkers how to use the EUSS, connected each other to professionals, and shared information to encourage people to apply before the deadline. All this confirms the importance of the burgeoning migration intermediaries literature mentioned in Ch.5, showing how projects like the EUSS tend to be supported by intermediaries who assist migrants in coping with the new technology.

However, what has not been highlighted yet in the literature, which this thesis shows, is that such people also function as innovation intermediaries in the sense that they help people cope with and adopt new technology and ensure the new technology is successfully adopted (see Ch.5). In this sense, they conduct the various activities which have been associated with innovation intermediaries, such as sharing knowledge and expertise, brokering connections between people, supplying physical space for engagement, and encouraging use of the new technology (Vidmar, 2020, p. 22). At one point, I informally pressed an interviewee on this point, asking whether or not he thought his work was contributing to the success of the EUSS; this was something he forcefully insisted was not true since he saw his work as fundamentally opposed to the government and what he saw as a terrible scheme. However, if success or adoption meant that people were applying for the EUSS and using it for status checks, my interviewees were certainly fulfilling the role of innovation intermediaries. Not in the sense of being pro-government, but in the sense of ensuring the EUSS was able to be used as a means for EU citizens and their family members to remain in the UK post-Brexit. On this basis, I would argue that the line between migration intermediaries and innovation intermediaries in the case of the EUSS was very ambiguous and sometimes

even non-existent. Additionally, the migration intermediaries literature might learn from the concept of innovation intermediaries in understanding the contribution of the groups they study to the introduction of new technologies.

1.3 Research Question 3: Workarounds and Coping with Information Technology

Alongside the emergence of this network of innovation intermediaries around the EUSS, in answering RQ3 (*How did applicants and status holders employ workarounds to respond to problems when using the EUSS?*) and RQ3.1 (*How can the concept of workarounds help to understand the implementation of the EUSS?*), the thesis also documented a range of (what from the perspective of the initial design would be considered) non-standard uses of the EUSS. These included printing out the V&P page and using it as an ID card, displaying it on one's phone, using the letter from the home office confirming receipt of status as either proof of status or as a way of telling by when Settled Status needed to be applied for, using old HR records as proof of status, and even adaptations to the technical setup of the EUSS itself, including integrating it with other government departments, changing the eligibility requirements.

While the existing work on border control has generally framed non-standard use as resistance and also generally not depicted border control technology as anything other than an obdurate and hegemonic imposition upon migrants, these findings showed the extent to which there was actually quite a lot of room for status checks to be performed in ways that were not prescribed by the government. For instance, in what I consider one of the most fascinating features of the EUSS I documented in this study, when people would print out their status page from V&P, and status checkers would accept this as proof of their status, this was effectively finding a way to patch up the misalignment between the EUSS' method of proving status and what people were used to. Doing so also offered a way of carrying on with existing methods of checking immigration status checks via visual inspection of physical documents when the EUSS either did not work or did not meet the needs of status checkers. Such fixes made a lot of sense given the immense break the EUSS represented, and after speaking with quite a few status checkers and status holders about this, I would be surprised if they were not present in any further attempts at implementing digital statuses.

By conceptualizing these non-standard uses as workarounds, following Bhattacharjee et al. (2018), I aim to stress that rather than resistance, they can be better understood as coping with change and attempting to make the EUSS work as a mechanism for providing a legal immigration status despite its myriad of flaws, including technical glitches and its poor alignment with other IT systems and practices. This is a relatively new addition to the study of border control, and which I think is important in identifying how people were actually using the EUSS.

1.4 Research Question 4: From Control to Coping with Change

Finally, in answering RQ4 (*How can the experience of Brexit and the EUSS inform the application and development of STS concepts, such as innovation intermediaries, workarounds, and social learning, to expand upon existing accounts of border control technologies in offering nuanced examinations of how these technologies are adopted in everyday contexts?*), which is the most theoretically-driven research question, I want to offer what I think is the main implication of the thesis for scholarly understandings of

border control: that internal border control projects like the EUSS present not only policy problems, but also problems of learning, adjustment, and coping for the people obliged to engage with them. By understanding the implementation of the EUSS as much more a matter of coping and adjustment than social ordering and control, an STS perspective can shed light on the mundane but nevertheless deeply consequential features of border control IT that might be missed in a security-focused account. This answer to my fourth research question holds value for further studies not just of the EUSS but also for future STS examinations of border control IT. The subsection begins by looking at the study's contribution to existing accounts of the EUSS and border control. It then explores what the study implies for the ongoing development of STS research on border control. In the latter discussion, I show how my doctoral research offers the following contributions to STS research: First, my research provides insights into the mixed status of my interviewees (members of civil society groups, employers, and status holders) as both migration intermediaries and innovation intermediaries. Second, my research shows how these groups enabled not only workarounds of problems with the EUSS but also its absence and the failure to unlearn old methods of status checks. These insights draw upon and develop an information infrastructures perspective offer a corrective approach to security-focused accounts of border control within both STS and critical security studies. They should inform further attempts to offer nuanced yet critical examinations of the everyday use of border control technologies.

The EUSS was interesting as its own case, given the novelty of its being applied to an already-resident population during a period of immense political change with the UK's withdrawal from the EU (see Ch.1 and Ch.2), but it is also a project with lessons for border control IT in general. While border control projects are often understood as a question of state policy (see Torpey (2000) and Bigo (2004)), I followed the emerging literature at the intersection of STS and critical security studies in focusing on the interaction of various actors in order to understand what problems people encountered and how they responded to them. Doing so brought to light a range of issues that showed how active use of the EUSS was, and how applicants, status holders, status checkers, and intermediaries alike sought to wrestle with the misalignment between the EUSS and their existing practices and IT. Far from being passed down upon a passive group of users, I documented how the EUSS was being adopted and learned about actively. This is an aspect of the EUSS overlooked by existing research on it, such as the work of Tomlinson and Jablonowski.

In response to the limitations of existing work on the scheme, and following the work of scholars in the information infrastructures tradition (see especially Pelizza (2023a), Pollozek and Passoth (2023), and Stewart and Hyysalo (2008)), throughout the thesis, I conceptualized this process as social learning or the complex and reflexive processes of adapting practices to new technology and new technology to those practices. While the concepts of social learning and information infrastructures have been applied in STS and IS to understand technology in other contexts, such as business and medicine, it is only recently that such a scholarly endeavor has been undertaken in the study of border control (see Ch.2, Sec.3). Such an approach to border control IT identifies how the construction of new information systems and infrastructures is a long and contingent process of, and that in the short-term, workarounds and ad-hoc solutions can help to ensure IT meets the needs of users. Drawing on this literature, and as identified above, my study of the EUSS found that workarounds and intermediaries were part of what maintained the EUSS as a (partially) functioning IT system. This is because IT projects like the EUSS need to be

materially incorporated into reality and the practices of users – something far different from simplistic ideas of legally formulating exclusive frameworks and imposing them on reality.

This is where my work has its most significant theoretical difference from the work of policy and civil society researchers working on the EUSS. As discussed in Ch.2, I see existing research on the EUSS as providing an excellent engagement with the policy and legal problems of the EUSS, but also find that due to its bias toward policy and portrayal of the EUSS as largely controllable by the government, it misses some of the concerns identified in the empirical section of the thesis. Rather than taking for granted that the harms arising from the EUSS arise from poor or malicious design choices on behalf of developers, I argued that there might be other concerns with the project that could be identified by looking at its day-to-day use and the activities of non-state actors.

As an addendum to existing work on the EUSS, and in an effort to better understand the implementation of the scheme, I argued for a study of the EUSS building on research at the intersection of STS and critical security studies. My biggest takeaway from this body of research, and the main way I sought to contribute to it, was to portray border control technology implementation as a slow and fraught process of learning and adaptation, where users need to fit technology into existing practices and make it work in the diverse contexts in which it is applied. What my study of the EUSS adds to this literature is an understanding of how these dynamics play out in internal border control (versus the cases of external borders typically examined) and just how much of a learning process the implementation of the EUSS really was due to its need to fit in with a range of diverse professional contexts due to the nature of internal border control. For instance, in addition to border guards, the EUSS needed to be adopted by HR professionals, landlords, and government bureaucrats at the DVLA and HMRC, among others.

Throughout my examination of how different actors in different contexts fitted the EUSS to their practices, I contributed a range of concepts to this emerging STS border control literature, namely social learning, workarounds, and intermediaries, which have been developed elsewhere in STS but have yet to gain much traction in studies of border control. My argument throughout the thesis has been that by applying these concepts, STS researchers can understand in rich detail the work required to adapt internal border checkers' practices to new IT. Doing so can also emphasize the way border control IT can sort and categorize people in harmful ways while still not falling into the trap of portraying IT as static or fully controllable by governments and while still identifying the immense work that needs to be done outside the government in order to fit the EUSS into different social contexts (e.g., employment, travel, and taxation). Rather than simply portraying technology as a draconian imposition upon society or alternatively portraying it as fully configurable within contexts of use, my work traced out how the EUSS required and enabled adaptation and workarounds while also having a profound impact on the professional and social practices into which it was fitted.

However, there are places where my findings can offer a new perspective on the concepts relied upon in the thesis (namely, intermediaries and information infrastructure) and show how they can be questioned or expanded. In the case of the concept of innovation intermediaries, I followed the functional understanding of these actors (see Vidmar, 2020), seeing them as playing a role in a network of actors formed around the EUSS. However, as I suggested in Ch.6, the canonical understanding of these actors as facilitating innovation should be taken a step further when applying this concept to migration control IT. As interviewees from civil society and the private sector emphasized, they had a substantial role in

providing user feedback to developers, ensuring people registered for the scheme, and helping users work through technical errors. This finding aligns with writing on the functions and roles of innovation intermediaries described in Ch.6 (see also the table below), suggesting that these individuals in civil society and the private sector could be classified as serving as innovation intermediaries in the implementation of the EUSS. However, STS work on innovation intermediaries has yet to engage with border control, and furthermore, my interviewees explained how intermediaries also challenged the imposition of the EUSS by the government, protected people from government decisions (including unlawfully being denied entry at the border), shared information about how to best manage issues with the scheme, and worked to ensure the continued lives of EU citizens in the UK post-Brexit. These are functions which are highlighted throughout the literature on migration intermediaries (see Ch.6 and Žabko et al. (2018)), which suggests that intermediaries in this case (and perhaps border control IT more generally) might be thought of as occupying a space between migration intermediaries and innovation intermediaries; said differently, between facilitating migration and facilitating migration control IT.

Functions of innovation intermediaries that I documented in the study	Functions of migration intermediaries that I documented in the study	Citations
<ul style="list-style-type: none"> - Sharing information between actors (government, status holders, and status checkers). - Providing feedback from users to the developers. - Encouraging status checkers to use the EUSS. - Articulating the goals and interests of various actors (businesses and status holders). - Connecting or gatekeeping between different intermediaries. - Creating spaces and connections to share knowledge and resources. - Encouraging and facilitating workarounds. 	<ul style="list-style-type: none"> - Helping migrants understand to and cope with administrative burdens of migration. - Serving as a connection between migrants and the authorities. - Helping migrants access legal advice. 	Vidmar (2020); Nilsson and Sia-Ljungström (2013); Howells (2006); Jones and Sha (2020); Xiang and Lindquist (2014); Žabko et al. (2018).

Table 14. The Migration and Innovation Functions of Intermediaries Documented in This Study.

This dual function of intermediaries has yet to be described in the literature, and highlights a substantial break this thesis makes with existing conceptualizations of the political power of states versus migrants. Highlighting this dual function of intermediaries in processes of border control IT implementation as

having the function of both facilitating migration and facilitating technology adoption helps to capture the nuanced and multi-faceted role of civil society groups working with the EUSS – they were not merely challenging the government, but also ensuring the ongoing success of the EUSS. Furthermore, this highlights the invisible work they were doing to support and enable adoption of the scheme, which has yet to be discussed in existing literature. I documented how such invisible work was critical in the effective implementation of the EUSS, with intermediaries variously ensuring that a sizable number of people successfully navigated the application process and were able to use the scheme for immigration checks. It is my contention that further STS endeavors to study border control IT should attune themselves to this mixed and essential role of intermediaries as both having the functions of supporting migration and supporting migration control.

Additionally, there are ways in which the account of political influence over technology in existing STS research on border control might be slightly nuanced in response to the findings of this study. Scholars like Pollozek and Pelizza have done significant work to move to an account of border control that understands the limits of state control and the role of non-state actors in border control IT implementation. My interviews certainly supported this account, showing how intermediaries and end users have been active in the implementation, maintenance, adjustment and day-to-day operation of the EUSS, shaping both the design of the system and its political impacts. Interviewees simultaneously saw their lives shaped for the worse by the EUSS and displayed a remarkable degree of agency over the shape it eventually took. This process of adjustment that I found stood in stark contrast to top-down models of state power, being more like a distributed process of coping and adjustment. Phrased differently, this might be considered a process of governance by infrastructure (DeNardis and Musiani, 2016; Pelizza, 2023), where rather than controlling an IT system or imposing new social order from above, developers and policymakers must contend with a range of other actors who mediate the impacts of the new technology on their practices. However, the account of border control offered by STS researchers may sometimes fall into the trap of missing the points of failure in this governance by infrastructure. As Pelizza (2023b, p. 1) writes, there can be an

intimate relationship between knowledge shaped by practices and made durable in the artefacts used to produce, legitimize and circulate it, and the long-term outcomes of such crystallization. [...] new forms of institutionalization may constitute the outcome of knowledge practices made durable in data, protocols, servers and databases. Governance actors can be shaped by knowledge made durable in infrastructures.

What is interesting about the case of the EUSS, and what might push STS researchers to focus on the influence of the failure of border control technologies to shape their social contexts, is that I documented many cases in which the process of social learning with the EUSS was often slow or non-existent. Throughout the study, while many people were documented as getting through immigration checks via ad-hoc solutions, many others were unable to do so. Border guards were documented to have continued using paper documentation, employers relied on internal records to check immigration status, and the people still routinely required expert help to deal with the government in immigration matters. Additionally, alongside a failure of learning, there was also a failure of unlearning. One aspect of the EUSS that existing work on border control technology has failed to capture is that infrastructuring border control requires the unlearning of a range of existing practices (in this case, the use of paper documents for immigration status checks). In my research, I found that status holders and status checkers alike would

try to use the EUSS in ways that made it resemble a BRP (e.g., printing out V&P or sending screenshots) due to the necessity of using a physical document within the limitations of status checks. This was the case for border guards, who needed to see something quickly that could enable authorization to cross the border. This was the case for HR officers, who needed a PDF file to upload to their systems. It was the case for employers in small firms who did not have the capacity to check immigration statuses using a computer. All this implies that it was not simply the new technology but its limitations, gaps, contingencies, and, most of all, its failures to supplant old modes of immigration status checking that caused harm. Even the most nuanced STS researchers can fall into the trap of assuming that it is merely the successes of border control technologies that cause harm to society (as Pelizza (2023a, p. 162) phrases it, “the infrastructuring of a securitized Europe”), not realizing that it can also be their absence – and the points in which they fail to replace on an entrenched installed base of immigration control practices and IT – which shape the lives of migrants. While infrastructure is a powerful framework to understand border control, what is perhaps necessary is to understand where contexts of use of border control IT are ardent to change, and that this obduracy of the installed base is what can often cause harm, not the new technology. Put differently, it is the absence of the new technology, not its presence, that compels intermediaries to support workarounds. The activities of intermediaries I documented throughout this thesis were often to work around instances in which the EUSS was the status people had (and on a policy level, the status that should have been checked) but failed to be the status they were compelled to use, and they were forced to work around the absence of the new technology. This is something I urge further researchers to explore in future studies of internal border control.

Overall, the outcomes of the thesis are valuable for the following reasons. First, EUSS is a relatively unique case of border control technology, making it a novel endeavor for STS research on border control. Second, the study has practical implications for other contexts, such as the further development of internal border control in the UK and similar schemes elsewhere. Third, the methods employed highlight the challenges of investigating such a topic, given the large geographical and temporal scales of their use and development. Finally, the findings highlight a possible avenue for further investigation of border control IT projects from an STS perspective, showing how the concepts of social learning, intermediaries and workarounds can be part of productive scholarly engagements with these projects. My research suggests that by better understanding and even seeking to facilitate such learning processes, projects like the EUSS can better avoid some of the harm they cause to users – although certainly, I would agree with migration scholars like Bigo (2004) in being critical of the existence of such border control projects at all.

2. Limitations

This section addresses the study's limitations. While, as argued above, the study provides novel insights about the EUSS with far-reaching policy implications for this specific project and migration control more broadly, it was limited by its short timeframe, lack of access to government officials and developers, and changes to its initial research design. After discussing these limitations, I discuss what I would have done differently if I were to have done this study again, knowing what I do now in hindsight.

First, the thesis is limited by the short timeframe in which I was able to research the EUSS, owing to the short duration of a doctoral research project. The short timeframe in which the research was conducted limits the study's ability to present a comprehensive account of the EUSS implementation. For instance, I

cannot provide a complete picture of the extent to which the problems and workarounds identified are still ongoing or have been addressed. Additionally, I can only say very little about the ongoing levels of integration of the EUSS with the rest of e-government due to this snapshot nature of the study. The EUSS is a project that will have impacts for years and decades to come, given that people who stay in the UK (presuming their status does not lapse and they do not obtain British citizenship) will need to continue using the EUSS over their lifetimes. It will also potentially keep evolving and being modified in its scope and applications, as the interviewee quoted at the end of Ch.4 explained. Understanding these long-term impacts is far beyond the scope of the present study but is a vital task for further research.

Second, there are limitations due to my lack of access to government officials and developers. The study is based solely on interviews with applicants, employers, and intermediary actors and not with government officials or developers. As a result, I am unable to explore the motivations behind the project, the way the government understood the role of civil society, or the extent to which the Home Office has been aware of workarounds and how they are discussing and responding to them. Furthermore, I cannot answer questions about the technical architecture of the scheme and how it works at the government level. Who had the most agency in designing the EUSS? Who has access to EUSS data, and for what do they use it? Questions like these are beyond the scope of the present study.

Finally, there are limitations due to my omission of social media data. This has meant that I was unable to discuss the role of social media in helping people address problems they experienced with the EUSS, and also cannot present a discussion of some issues I found present in my pilot research on social media data but not in interviews or the report form, such as the role of concerns about family permits in the implementation of the EUSS. For these reasons, the study needs to be complemented by additional research to fully understand the current state of the EUSS and its impact on various groups of people. Such research is thankfully ongoing, with various civil society groups and academics working to understand the EUSS and its impacts in greater detail and over a longer period of time.

In response to these limitations, were I to conduct this study again, I first would attempt to follow the EUSS through a longer period of its development to trace out how the problems encountered here played out over more of the EUSS' lifespan. Second, I would have ideally liked to have gotten access to developers for interviews and may have also relied on Freedom of Information Act requests to understand more about the technical setup of the EUSS. Third, were I to do this study again, I would engage further with civil society groups working with vulnerable groups to better understand the issues faced by individuals in more vulnerable positions or with fewer resources to access support.

However, I do not want to suggest that these limitations should invalidate the thesis because the thesis was still able to qualitatively document a range of ways in which the EUSS was used. These contradict some of the government framing of the EUSS discussed in Ch.1-2 and highlight both the importance of integrating the EUSS with the installed base and the importance of intermediaries. Despite the partial findings presented in this thesis, they provide a starting point for understanding the flexibility of border control IT projects like the EUSS. It is my hope, as I discuss in the next (and final) section, that others continue conducting implementation studies of the EUSS and projects like it.

3. Final Thoughts and Implications for Further Research

Finally, I want to restate the study's implications for further STS research and research on digital ID schemes like the EUSS. By highlighting the misalignment of the EUSS with the installed base and the role of intermediaries and workarounds in helping people cope with issues, the study demonstrates the utility of STS concepts in explaining the EUSS as a particular instance of border control IT. However, I hold that the implications of this approach advanced by researchers at the intersection of STS and critical security studies go beyond the EUSS to other cases of internal border control and ID card schemes. In particular, the research's findings are crucial in understanding the flexibility of border control IT projects like the EUSS and the need for continuous research throughout their lifespans to understand their impact on various groups of people.

There are other schemes that have parallels to the EUSS, including the Aadhaar project in India (Sathe, 2014), the expansion of e-ID across Europe (Info Norden, 2024), and the further development of e-visas in the UK. These projects have been subject to extensive criticism and are likely to come under further public scrutiny in months and years to come. This thesis has shown that understanding the ways these projects aligned or misaligned with existing e-government and routines of private and public officials is important, as misalignment can cause a great deal of harm. Furthermore, exploring coping mechanisms and the evolution of these projects in response to failure is important for informing responses to them.

Overall, the study demonstrates the value of STS concepts in explaining border control projects like the EUSS and projects like it. Emphasizing the misalignment of the EUSS with the installed base of practices and IT, the vital role of intermediaries, and the widespread use of workarounds in helping people cope with the new system has aimed to offer a path forward for STS researchers working on similar projects. In particular, the thesis suggests that further work needs to look not just at policy or impacts, but how these are mediated by a range of partial solutions (e.g., issue contributes to the understanding of how such projects can be implemented in the future. While there has been substantial work on external border control in Schengen by researchers like Pelizza and Pollozek (see Ch.2), there has been very little work by STS researchers on internal border control projects like the EUSS.

Therefore, examining the EUSS' implementation is both a necessity in response to the myriad of harms it has created for users and an opportunity to extend existing research on migration control technology at the EU's external border to internal immigration checks and provide a demonstration of the value of STS and IS approaches to such projects.

The study's implications for further STS research on digital ID schemes like the EUSS are critical. The novelty of the EUSS as a project applied to an already-resident population and the relative lack of engagement by STS researchers on internal border checks offer a pathway forward for further research, in particular those exploring issues of information sharing and non-standard use. I hope that this thesis will be a step in the direction of further STS examination of the EUSS and internal immigration checks (such as further UK e-visa programs), highlighting how these projects are adopted and integrated into the practices of users.

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Appendix 1: Changes to the Thesis Requested by the3million.

Comment from the3million	Description of change
<p>You mention in a number of place that 'Limited Leave to Remain (LTR)' is a new immigration status. That's not the case however, it's the UK's standard leave to remain when it isn't indefinite leave to remain. Both settled and pre-settled status were 'shoehorned' into the UK's existing immigration system.</p>	<p>I didn't know this, thank you for pointing it out! Changed accordingly.</p>
<p>The court case didn't really overturn limited leave to remain. It's only that this limited leave to remain isn't allowed to expire just because someone doesn't make a further application to the EUSS. It can be lost for other reasons though - e.g. spending to long outside the UK, or in certain criminality cases. You also in a table later on say "Court case ruling PSS an invalid status", that isn't true.</p>	<p>I also didn't catch this distinction, changed accordingly.</p>
<p>Similarly, it's not the case that the court case results in all pre-settled statuses being converted to settled status. The Govt will try to do some automated upgrades to settled status, but only for the subset of people where the checks against HMRC/DWP records can automatically show they've been in the UK for 5+ years.</p>	<p>I also didn't catch this distinction, changed accordingly.</p>
<p>In the section "2.3 online status checks" there's a paragraph that says "The so-called digital status works by logging into a government website by entering one's date of birth and ID document number, getting a security code sent to one's phone or email, and reentering the security code. This code can then be provided to someone checking the immigration status (such as a landlord or an employer), who is to type the code back into a different website to see the status holder's records online." It might be worth making it clearer that there's two separate codes here. The security code is just used by the status holder to log on. They then have to generate a share code - and that is the code that is provided to someone checking the immigration status.</p>	<p>Changed accordingly.</p>
<p>There's a table which contains 'McCarthy cases' - might want to qualify that because it's only available in a few cases (where they had a right of permanent residence before 16 July 2012).</p>	<p>Changed accordingly.</p>

<p>In that same table, Surinder Singh also includes EU family members - baseically it's any family member of a British citizen</p>	<p>Changed accordingly.</p>
<p>In that same table, I think the description of Ibrahim might not be correct - see here, Ibrahim usually gets mentioned together with Teixeira (related to children in education). And Chen is the separate one (primary carer of a self-sufficient EEA child)</p>	<p>Changed accordingly.</p>
<p>In various places you mention a BRP - for family members of EEA citizens these are BRCs rather than BRPs (cards rather than permits). Basically BRCs are for any status related to EU Free Movement, and BRPs are for any status that have nothing to do with the EUSS or the old EEA free movement stuff.</p>	<p>Changed accordingly.</p>
<p>Under the same table, you mention that people with these biometric cards/permits have the choice of authorisation using V&P or the BRP. While that's still true for many things including travel, it might be worth mention that since April 2022, BRPs (and BRCs) are not valid for right to work or right to rent checks anymore, and that BRP/BRC holders instead have to generate a share code, like EU citizens.</p>	<p>Changed accordingly.</p>
<p>At some point you write "Third, there are concerns about eligibility for the scheme. As Smismans (2019) has noted, there are concerns that requiring EUSS applicants to provide evidence of their residence in the UK – as opposed to alternatives like requiring people to simply declare their residence – provides an administrative burden that some number of individuals will not be able to overcome". I think that it's not that easy to 'simply declare your residence'. You'd still have to evidence it. The difference between declaratory and constitutive are quite hard to summarise though...</p>	<p>Rephrased and added a footnote with a more detailed explanation.</p>
<p>In section 1.1.2 "Criticisms of the Digital Status", I noticed that you said "vindications of this framing of the EUSS as a security problem" - however I read the previous paragraph as framing the EUSS as a solution to a security problem, not as a security problem, so I'm not sure the two paragraphs follow each other.</p>	<p>This was poor wording on my part and I had intended to say that the EUSS also creates a lot of security issues for applicants/status holders due to problems with its IT. Rephrased accordingly.</p>
<p>You said there's 1795 reports, but I think it's less than that? I count 1405 by the end of December 2023.</p>	<p>Changed the numbers to reflect this.</p>

In a few places, there's mention of the share code validity - at times it says 30 days and at times it says 90 days. Which is correct, because the Home Office changed this on 17 Feb 2022. I just thought it might be helpful to acknowledge this was changed - and could fit into your Workarounds chapter. It was changed partly because of feedback supplied by the3million - see

<https://the3million.org.uk/publication/2022030301>, where Home Office write in their reply "As an example, based on feedback from users (both status holders and third party users of checking services) that share codes often expire before they can be used, the validity duration of View and Prove my Immigration Status, Right to Work, and Right to Rent share codes has been increased from 30 to 90 days. This will help reduce the need for third parties to contact the person to ask them to generate a fresh share code, whilst maintaining the principle that third party access to a person's immigration status should not be indefinite. We will continue to work to improve the user experience and will announce any further initiatives as soon as we can." The DVLA was the main department where this problem commonly showed up. You've stated in a few places that DVLA can see the status directly now (without needing a share code), I can't be 100% sure but I don't think this is true, I think they do still need a share code. You can also see that it was changed on 17 Feb on this link <https://www.gov.uk/government/publications/view-and-prove-your-immigration-status-evisa#full-publication-update-history> if you click "Show all updates" and look at the list of updates at the bottom of the page.

Addressed, and pointed to your work, thanks for this!

In the table under the section "2. Categorizing Workarounds in Border Control", in the row "Not having an email account", you wrote under "Contribution to the goals of the EUSS" that this was a "Positive contribution, more people able to apply for the EUSS". While that is true, you might also want to consider that it could be a negative contribution in that it might hamper the status holder from accessing proof of their status further down the line, as the email address is part of the "key" used to "unlock" digital status (in the sense that a security code is sent to it). I know the security code can also be sent to a telephone number. But even so, it's a very real problem where lots of helping organisations / individuals used their contact details to apply for status, and the status holder is now beholden to that organisation / individual to access their

Changed accordingly.

<p>digital status. Not all organisations / individuals are benevolent, or accessible - some extort money for this service, others lose touch with the individual etc.</p>	
<p>In section 3.1 "Printing a Digital Status", you might want to make a clearer distinction between printing the letter, and printing the screenshot of V&P - both of which are done by people but your first paragraph in this section slightly conflates the two.</p>	<p>Changed accordingly.</p>
<p>In section 2.2 "Oping Out, Rejecting, or Subverting the EUSS", you wrote "This might be explained by the fact that non-EU nationals did not have the experience of having their rights to stay in the UK under FoM revoked." This isn't true - non-EU family members had a EEA status or document based on EU law, and this became invalid. In fact this has caused a lot of problems for non-EU family members who had a proof from the Home Office that still appears in date, and which in fact became invalid. (For an example, see here: https://mailchi.mp/the3million/newsletter741658-742042?e=6f358c3f41)</p>	<p>Changed accordingly (simply deleted these sentences).</p>
<p>In your paragraph about the requirements for citizenship being fairly row, and a legall fairly easy opt-out, you could perhaps add that it's very expensive so not available to the more vulnerable (it costs roughly £1,500), and for people from some nationalities it would involve having to surrender their original nationality. This is for example the case for most (not all) Dutch citizens (there's some exemptions) - and by having to give up Dutch citizenship you'd also be giving up your EU citizenship.</p>	<p>Changed accordingly.</p>
<p>In "4 Supply-Side/Developer Workarounds: Development of Supplementary IT Systems" I've a few links to official documents which might help you: https://www.gov.uk/government/publications/view-and-prove-your-immigration-status-evisa/your-immigration-status-an-introduction-for-eu-eea-and-swiss-citizens-accessible-version which says "As part of our wider reform of</p>	<p>Not addressed in light of a subsequent email from Monique Hawkins.</p>

the immigration system, we are increasingly enabling some Government departments and public authorities to be able to automatically access immigration status information. Currently, this includes the Department for Work and Pensions (DWP), HM Revenue and Customs (HMRC) and NHS England and Wales. The Borders, immigration and citizenship privacy notice provides information about how we share data with other Government departments."

It also says "Border Force staff can check whether you have status or have applied to the EU Settlement Scheme by using your travel document if it is linked to your UKVI account or conducting further checks if you travel on an alternative document."

<https://www.gov.uk/government/publications/new-plan-for-immigration-legal-migration-and-border-control-strategy/new-plan-for-immigration-legal-migration-and-border-control-accessible> - could be helpful for your section where you describe airports implementing pre-authorisation. Paragraph 59 describes their plan to do just that. This was the policy paper as at November 2022. A more recent page can be found among the Government's various information pages about Electronic Travel Authorisation (ETA) for example <https://www.gov.uk/government/publications/nationality-and-borders-bill-electronic-travel-authorisation-factsheet/nationality-and-borders-bill-electronic-travel-authorisation-factsheet> which includes "To be fully effective, individuals' permissions must be checked by their carrier and confirmed prior to travel. Carriers will be expected to confirm that an individual has an appropriate permission to travel, in document or digital form, before they bring them to the UK. Otherwise, they may be liable to a penalty charge. The Home Office will use interactive advance passenger information (API) to confirm whether an individual has permission to travel to the UK and return an electronic message to the carrier advising them whether someone has a permission to travel."