

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT **C**

CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS



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The Commission's legislative proposals on Smart Borders: their feasibility and costs

STUDY





DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT C: CITIZENS' RIGHTS AND
CONSTITUTIONAL AFFAIRS

JUSTICE, FREEDOM AND SECURITY

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Abstract

This study examines the technical feasibility and financial soundness of the Commission legislative proposals to establish a EU Entry/Exit System (EES) and EU Registered Traveller Programme (RTP) for the external borders of the Union. It puts the impact assessment documents accompanying the proposals in comparative perspectives with likeminded initiatives in third countries (US-VIST), at the national level in the EU (UK border checks and e-Borders), and with past European initiatives (SIS II, VIS). It finds that it is not reasonable to consider that the measures envisaged in the smart borders package are technically feasible and financially sounds, and formulates recommendations to the LIBE Committee and the European Parliament in this regard.

This document was requested by the European Parliament's Committee on Civil Liberties, Justice and Home Affairs

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LIST OF ABBREVIATIONS

ABC	Automated Border Control
AFSJ	Area of freedom, security and justice
BCP	Border Crossing Point
CBP	Customs and Border Protection
DHS	Department of Homeland Security (US)
DOD	Department of Defence (US)
EES	Entry Exit System
GAO	US Government Accountability Office
HOWI	Home Office Warnings Index
IAB	Impact Assessment Board (European Commission)
IAU	Impact Assessment Unit (European Parliament)
ICE	Immigration and Customs Enforcement
ICI	Independent Chief Inspector of the UKBA/of Borders and Immigration
IDENT	Automatic Biometric Identification System
IRIS	Iris Recognition Immigration System
OBIM	The Office of Biometric Identity Management
POE	Port of Entry
RTP	Registered Traveller Programme
SCIFA	Standing Committee on Immigration, Frontiers and Asylum
SIS (II)	Schengen Information System (second generation)
UKBA	United Kingdom Border Agency
US-VISIT	United States Visitor and Immigrant Status Indicator Technology programme
VIS	Visa information System

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EXECUTIVE SUMMARY

Background

On 28 February 2013, the European Commission adopted three legislative proposals forming the 'smart borders package'. In March 2013, following the first presentation of the package to the LIBE Committee during the hearing on Schengen governance of 20-21 March, the European Parliament issued an invitation to tender for a briefing note that would **complement, but not replace**, previous work on the human rights and data protection aspects of smart borders¹ by examining their technological feasibility and real costs. While they are separated for the sake of clarity, legal, political, technical and financial aspects should nonetheless be taken into consideration together.

Aim

This study examines the technical feasibility and financial soundness of the Commission legislative proposals to establish an EU Entry/Exit System (EES) and EU Registered Traveller Programme (RTP) for the external borders of the Union. The 'smart borders package', as it is now commonly referred to, builds on lengthy impact assessment work conducted by the Commission's services and external contractors.

The study argues that it is important to draw a distinction between impact assessment and feasibility, that is, between **prescription** and **verification**. In the EU policy process, **the impact assessment process is supposed to provide a decision-making aid** that gives the legislator more accurate and better structured information on the positive and negative impacts of proposals. The smart borders impact assessment simply presents the co-legislators with a set of scenarios **designed to legitimise the policy option already chosen by the European Commission**.

The issue is arguably broader than the matter of the smart borders package. The **future-oriented** impact assessment work seen in recent years in relation to large-scale IT systems supporting the area of freedom, security and justice has typically involved the **circumvention of empirical verification of feasibility**, which can **only be examined by looking at policies implemented in the past as well as by other actors**. This in turn raises a question as to why the co-legislators are not informed of the outcome of past likeminded EU or national initiatives, **particularly their failures**, and of **the way in which the European Commission intends to mitigate known and verified risks**. Whether this is a guilty silence, an embarrassed silence or a bureaucratic silence, one of the **overarching recommendations** proposed by this study is that the **procedures of impact assessment need to be revised so that technical and financial risks are not only dealt with as hypothetical outcomes, but grounded in empirical verification**.

To underscore this point, the study puts the technical and financial feasibility of the smart borders package **in comparative perspective with likeminded initiatives undertaken in EU Member States as well as in third countries**, with particular attention to the US experience, which in terms of scale and scope is proximate to what the European Commission foresees as the final objective of its legislative proposals. It finds that **most of these initiatives, while initially assessed as technically feasible and financially sound, have experienced major difficulties** in the course of their development, deployment, or subsequent functioning. Insofar as this **fundamentally challenges the prospects of technical feasibility and financial soundness for smart borders**, the study identifies some similarities between these different cases, and draws on this material to formulate questions to be raised in the process of verifying the feasibility of the smart borders systems, and provide a set of policy recommendations.

The key findings of the study are listed on the next page.

¹ See Bigo, D., Carrera, S., Hayes, B., Hernanz, N., Jeandesboz, J. (2012) *Evaluating current and forthcoming proposals on JHA databases and a smart borders system at EU external borders*. Brussels: European Parliament, PE 462.513.

General information

KEY FINDINGS

GENERAL ARGUMENT

- There is a key difference between impact assessment and feasibility. Impact assessment is prescriptive, while feasibility involves empirical verification.
- Impact assessment is not supposed to pre-empt political judgment but is often used in practice to justify the need for the co-legislators to adopt a legal instrument, and to legitimise the policy option preferred by the European Commission.
- Impact assessment work tends to circumvent empirical verification of feasibility, which can only be established by analysing past likeminded initiatives implemented either at the European or national level.
- Impact assessment procedures, particularly for large-scale IT systems supporting the area of freedom, security and justice, need to be revised, so that technical and financial risks are not dealt with as hypothetical outcomes, but grounded in empirical verification.
- The study puts the Commission's proposals for the smart borders package through a comparative analysis with likeminded initiatives (scale and/or purpose) implemented at the EU and national level. It pays specific attention to the cases of the US and the UK. It finds that initiatives that were initially assessed as technically feasible and financially sound nonetheless experienced important difficulties that led to severe delays and increase in costs.

EU SMART BORDERS: STATE OF PLAY

- The scope, objectives, requirements and costs of the smart borders systems have been subject to notable disagreements and diverging assessments over the past ten years.
- The continued emphasis on smart borders reflects a pattern of path dependence rather than an actual need for further measures involving large-scale IT systems in EU border control policies.
- In 2004, the costs of introducing an Entry/Exit system were deemed "exorbitant", and its implementation "risky" in the context of the establishment of the Visa Information System.
- Total estimated costs for EES and RTP have risen from €100 million in the European Commission's 2008 impact assessment, to €1,335 million (€1,3 billion) in 2011.
- The planned introduction of EES and RTP has been criticised by some Member States, the European Parliament, the EDPS and the Commission's own Impact Assessment Board in terms of their proportionality and their necessity, particularly in the absence of an evaluation of the functioning of SIS II and VIS.

DIGITAL BORDER PROGRAMMES IN EU MEMBER STATES AND THIRD COUNTRIES

- The digitalisation of border controls is a growing trend at national level in the EU and in third countries. 11 EU Schengen Member States as well as Bulgaria, Romania and the United Kingdom, operate entry/exit-like systems. 12 EU or Schengen countries operate automated border-crossing schemes, in some cases combined with RTP-like systems. These are usually limited to selected airports.
- Systems similar in scope and/or scale to the measures envisaged in the smart borders package have encountered recurrent problems.

- The system of tracking entries and exits in the UK has experienced a major crisis in 2011, leading to the dismantling of the UK Border Agency, from which has yet to recover. In the meantime, the UK RTP-like scheme IRIS has been discontinued and replaced with a pilot "Registered Traveller Scheme".
- The US-VISIT programme has operational entry functionality, but failed to produce an exit component despite widespread political and financial support.
- The US-VISIT programme has been termed 'high risk' by the US Government Accountability Office. They have consistently reported concerns about the programme's inefficient management, high costs, missed benchmarks, lack of result measures, and absence of transparency and accountability.

THE TECHNICAL FEASIBILITY OF EU SMART BORDERS

- In discussing the technical aspects of the smart borders systems, it is important to keep in mind that so far there has been no technical feasibility study of the 2013 EES and RTP proposals. The work done by external contractors on behalf of the Commission in 2008 focused on assessing the respective merits and technical challenges of different policy options. There has been no further empirical verification of the models it used as recommended by the contractor.
- It is in fact foreseen that EU-LISA will conduct such a feasibility study, to be delivered in 2014. The reason for adopting legislation on smart borders before the full feasibility study has been produced is unclear.
- Having decided to pursue smart borders as a political objective in 2008, the Commission has focussed on "selling" the policies at the expense of impartially evaluating their necessity, feasibility and impact.
- A survey of the member states in 2009 suggested that the contractor had massively underestimated actual border crossing times but no further feasibility study was conducted.
- The EES feasibility study was based on the collection and storage of four fingerprints but although the EES proposal envisages the use of ten, the Commission has not updated the estimated border crossing times.
- If industry standards for ten print enrolments are incorporated into the model used by the European Commission to demonstrate the effectiveness of the proposed EES, the time it takes the majority of TCNs to enter the EU actually increases substantially as compared to the status quo.
- Contrary to the European Commission's claims about its proposed RTP, the 2008 feasibility study suggested that the crossing times for members of the RTP would actually be longer than for those of non-members entering through the EES.
- Despite referring frequently to the efficiency of national RTPs and ABC gates, no use-case models actually demonstrating significant benefits to travellers from the proposed EU RTP have been produced by the European Commission.
- The EU has just funded two expensive, large-scale demonstration projects examining the workflow and functionalities of ABC gates but the rush to agree the legislation means the findings will have no bearing on the design of EES or RTP.
- The implementation of US-VISIT has run into multiple technical feasibility issues concerning both the entry and exit components of the system. For the entry component, these include deployment at land ports of entry, as well as integration and interoperability issues between the different components of the system as well as with other large-scale IT systems. At this time, the exit component of US-VISIT is still not operational, and the Department of Homeland Security is still at the stage of running pilot projects, having failed to meet a number of congressional mandates and requirements. The US-VISIT experience shows that there cannot be a "one-size-

fits-all" approach to systems operating on such a scale, an issue that the European Commission's impact assessment does not address.

- In the UK, the introduction of new procedures involving IT tools for border checks has resulted in 2011 in a crisis leading to the dismantlement of the UK Border Agency. These procedures resulted in increased waiting times at the border, further workload for frontline border officials, leading to the lifting of checks at some of the busiest ports of entry into the country (and incidentally, in the case of Heathrow, into the EU).
- The case of the UK shows the limitations of the strictly technological assessment of feasibility accompanying the smart borders package, and demonstrates the need to take into account the labour aspects of border control work beyond calculations of average passage time at border checkpoints.

THE COSTS OF SMART BORDERS

- The impact assessment documents accompanying the smart borders proposals simplify the calculation of the costs associated with the initiative. They do not take into account lessons learnt from past likeminded initiatives in third countries, at the national level in the EU, or at the European level with SIS II and VIS.
- Every single one of these past initiatives has experienced long delays and escalating costs, due in particular to problems in programme management. Despite the establishment of EU-LISA, it doubtful that the EU is equipped to avoid the problematic issues that are likely to materialise in the development of the smart borders systems.
- The estimated costs provided by the European Commission for the smart borders package are derived from a cost analysis study produced by external contractor Unisys in 2010. The contractor introduced several caveats in the study, and noted that the results of the cost analysis constituted a median value, with a 25% confidence range (plus or minus). This margin of error was not reported in the impact assessment documents accompanying the smart borders legislative package.
- The Commission claims that it can achieve a 30% cost-saving by building the EES and RTP on the same technical platform but has not provided any detail on how these savings can be achieved.
- Variables in the Commission's costs estimates that are likely to have an adverse financial impact include the administrative costs incurred by Member States in the running of the EES, and the costs of processing RTP applications in consular posts abroad, particular those that are unused to dealing with a large volume of requests.
- Experience in developing IT systems on such a scale and with such a scope show that programme management issues can significantly raise costs. The US-VISIT programme, the UK e-Borders programme, and the EU's own SIS II and VIS programmes, have all encountered steering issues deriving from the intervention of multiple bodies in the development process, leading to difficulties in relation to the external contractors tasked with implementing the measures. In the case of the e-Borders programme, this has led to the UK Home Office engaging arbitration proceedings against the prime contractor, which issued a counterclaim to recover substantial damages for termination in excess of £500 million pounds.
- Current discussions on the smart borders package suggest that the possibility of disagreement over the scope and purposes of the systems exists, and that this may lead to outcomes similar to those experienced in the case of SIS II in particular. The likelihood of EU-LISA playing a mitigating role in programme management issues is unclear at this stage.

1. INTRODUCTION

KEY FINDINGS

- There is a key difference between impact assessment and feasibility. Impact assessment is prescriptive, while feasibility involves empirical verification.
- Impact assessment is not supposed to pre-empt political judgment but is often used in practice to justify the need for the co-legislators to adopt a legal instrument, and to legitimise the policy option preferred by the European Commission.
- Impact assessment work tends to circumvent empirical verification of feasibility, which can only be established by analysing past likeminded initiatives implemented either at the European or national level.
- Impact assessment procedures, particularly for large-scale IT systems supporting the area of freedom, security and justice, need to be revised, so that technical and financial risks are not dealt with as hypothetical outcomes, but grounded in empirical verification.
- The study puts the Commission's proposals for the smart borders package through a comparative analysis with likeminded initiatives (scale and/or purpose) implemented at the EU and national level. It pays specific attention to the cases of the US and the UK. It finds that initiatives that were initially assessed as technically feasible and financially sound nonetheless experienced important difficulties that led to severe delays and increase in costs.

1.1. General argument: the limits of impact assessment and the need for an alternative

This study examines the technical feasibility and financial soundness of the Commission legislative proposals to establish an EU Entry/Exit System (EES) and EU Registered Traveller Programme (RTP) for the external borders of the Union. The 'smart borders package', as it is now commonly referred to, builds on lengthy impact assessment work conducted by the Commission's services and external contractors.

The study argues that it is important to draw a distinction between impact assessment and feasibility, that is, between **prescription** and **verification**. In the EU policy process, **the impact assessment process is supposed to provide "a decision-making aid" giving the legislator "more accurate and better structured information on the positive and negative impacts" of the proposals "but not taking the place of political judgment"**.² The smart borders impact assessment simply presents the co-legislators with a set of scenarios **designed to legitimise the policy option already chosen by the European Commission**.

The issue is arguably broader than the matter of the smart borders package. The **future-oriented** impact assessment work seen in recent years in relation to large-scale IT systems supporting the area of freedom, security and justice has typically involved the **circumvention of empirical verification of feasibility**, which can **only be examined by looking at policies implemented in the past as well as by other actors**. This in turn raises a question as to why the co-legislators are not informed of the outcome of past likeminded EU or national initiatives, **particularly their failures**, and of **the way in which the European Commission intends to mitigate known and verified risks**. Whether this is a guilty silence, an embarrassed silence or a bureaucratic silence, one of the **overarching recommendations** proposed by this study is that the **procedures of impact assessment need to be revised so that technical and financial risks are not only dealt with as hypothetical outcomes, but grounded in empirical verification**.

² European Commission (2002) *European governance: Better lawmaking*, COM(2002) 275 final, 5 June 2002, p.3-4.

To underscore this point, the study puts the technical and financial feasibility of the smart borders package **in comparative perspective with likeminded initiatives undertaken in EU Member States as well as in third countries**, with particular attention to the US experience, which in terms of scale and scope is proximate to what the European Commission foresees as the final objective of its legislative proposals. It finds that **most of these initiatives, while initially assessed as technically feasible and financially sound, have experienced major difficulties** in the course of their development, deployment, or subsequent functioning. Insofar as this **fundamentally challenges the prospects of technical feasibility and financial soundness for smart borders**, the study identifies some similarities between these different cases, and draws on this material to formulate questions to be raised in the process of verifying the feasibility of the smart borders systems, and provide a set of policy recommendations.

Even in a field as dense and technical as policies regarding large-scale IT systems, finally, it is central to underscore that **the question of whether 'smart borders' are feasible and desirable is also a political decision, for which the co-legislators are responsible**. Such a decision cannot be taken exclusively on grounds of a cost-benefit analysis that at the end of the day foregrounds one among many possible scenarios. The additional costs, delays and difficulties experienced in the development and deployment of SIS II and VIS are a clear reminder here. Providing a firm evidence base for policymaking is indispensable, but impact assessment and feasibility studies are no substitute for political responsibility.

1.2. Background to the study

On 28 February 2013, the European Commission adopted three legislative proposals forming the 'smart borders package'. In March 2013, following the first presentation of the package to the LIBE Committee during the hearing on Schengen governance of 20-21 March, the European Parliament issued an invitation to tender for a briefing note that would **complement, but not replace**, previous work on the human rights and data protection aspects of smart borders³ by examining their technological feasibility and real costs. While they are separated for the sake of clarity, legal, political, technical and financial aspects should nonetheless be taken into consideration together.

1.3. Organisation of the study

The study falls into five parts.

The next section (2) provides a brief update on the state of play of EU smart borders, recalling the process that led to the tabling of the smart borders legislative package and the substantial measures it foresees. The section suggests in particular that while the "smart borders" terminology is compelling, these policy initiatives are best understood as participating in the "digitalisation" of borders, characterised by the growing reliance on information technologies.⁴ Understanding "smart borders" as part of this general trend towards digitalisation is what opens up the possibility to compare initiatives, rather than denying similarities on the basis of specificities.

Accordingly, Section 3 samples digital border control programmes in EU Member States and third countries that involve large-scale IT systems similar to those envisaged by the proposals from the European Commission. Section 4 and 5 are dedicated to a comparative examination of the technical feasibility (4) and financial soundness (5) of the measures considered as part of the smart borders legislative package. For the sake of clarity, they are structured in a similar way. They first provide an internal examination of the European

³ See Bigo, D., Carrera, S., Hayes, B., Hernanz, N., Jeandesboz, J. (2012) *Evaluating current and forthcoming proposals on JHA databases and a smart borders system at EU external borders*. Brussels: European Parliament, PE 462.513.

⁴ For a discussion on European digital borders, see: Brouwer, E. (2008) *Digital Borders and Real Rights: Effective Remedies for Third-Country Nationals in the Schengen Information System*. Leiden: Martinus Nijhoff.

Commission's impact assessment, outlining the selected scenarios and the reasoning informing this selection. They secondly put these scenarios in comparative perspective by outlining how likeminded initiatives have played out, and highlighting some of the lingering questions that should be taken into consideration when examining the feasibility of the smart borders legislative package.

Section 6 offers some conclusions and a set of recommendations aimed in particular at the LIBE Committee of the European Parliament.

2. EU SMART BORDERS: STATE OF PLAY

KEY FINDINGS

- The scope, objectives, requirements and costs of the smart borders systems have been subject to notable disagreements and diverging assessments over the past ten years. The continued emphasis on these systems reflects a pattern of path dependence rather than an actual need for further measures involving large-scale IT systems in EU border control policies.
- In 2004, the costs of introducing an Entry/Exit system were deemed “exorbitant”, and its implementation “risky” in the context of the establishment of the Visa Information System.
- Total estimated costs for EES and RTP have gone from €113 million in the European Commission’s 2008 impact assessment, to €1,335 million (€1,3 billion) in 2011.
- The planned introduction of EES and RTP has been criticised by some Member States, the European Parliament, the EDPS and the Commission’s own Impact Assessment Board in terms of their proportionality and their necessity, particularly in the absence of an evaluation of the functioning of SIS II and VIS.

This section provides an overview of the current state of play concerning the smart borders legislative package. It maps the development of the legislative proposals (2.1.), and surveys their contents (2.2.), paying particular attention to the way in which the technical feasibility and costs have been assessed at each stage.

In this respect, the section points out that there **have already been notable disagreements and diverging assessments** on the scope, objectives, requirements and costs of the EES and RTP. Despite these issues, the option of developing the EES and RTP has not been taken off the table – in the case of the EES, notwithstanding the fact that it was initially ruled out by the European Commission on grounds that developing the VIS was a cheaper and more proportionate measure. A previous study commissioned by the LIBE Committee found that this pattern raised the question of **whether measures related to large-scale IT systems in the AFSJ were reversible**: it pointed out that the development of new ‘JHA databases’ tended to be decided less on the basis of a clear need for action than on **the claim that dots needed to be connected and gaps filled in data collection for law enforcement purposes**.⁵ As such, what characterises smart borders is less the “intelligence”, so to speak, that they confer upon border controls than a growing dependence on digital technologies. Within the remit of the present study, the kind of **path dependence** characterising the smart border package leads to questioning **whether the EES and RTP are indeed feasible within the parameters identified by the European Commission**.

2.1. The path dependence of smart borders

2.1.1. The origins of EU smart borders

It is customary to consider that the notion of “smart” border controls was introduced in the United States following the attacks of 11 September 2001, with the announcement by the White House of an “Action Plan for Creating a Secure and Smart Border” with Canada in December 2001.⁶ The roots of this discussion in the US, however, are to be found in the 1990s and in relation to the US-Mexico border, although the latter has since followed a different path. In the case of the US post-September 2001, smart borders were introduced on grounds of national security. For the EU the demand for so-called “smart borders” has been premised not on national security but immigration control, with security viewed as a

⁵ Bigo, Carrera, Hayes et al. (2012) *Evaluating current and forthcoming proposals on JHA databases*, op.cit.

⁶ See for instance: Côté-Boucher, K. (2008) The Diffuse Border: Intelligence-Sharing, Control and Confinement along Canada’s Smart Border. *Surveillance & Society*, 5(2): 142-165; Koslowski, R. (2005) Smart Borders, Virtual Borders or No Borders: Homeland Security Choices for the US and Canada. *Law & Bus. Rev. Am.* 11: 527.

secondary but nevertheless important consideration. The proposed EU entry-exit system and registered traveller programmes have thus been designed to complement the Schengen and Visa Information Systems (SIS II and VIS).

An EU entry-exit system was in fact first proposed as an “alternative” to the Visa Information System in the European Commission’s 2004 Impact Assessment,⁷ which envisaged:

a computerised system for collecting personal details of all visa holders entering and exiting the Schengen territory. Such collection could be done by ‘swiping’ passport and visa (where these documents are in a machine-readable format), or by keyboard entries in other cases. Such an entry-exit system could also be linked to SIS to enable checks between the two databases by the same ‘swiping’/data entry action. The records established on the database would be available to border guards and consular posts issuing visas.⁸

The contractor study on which the impact assessment was based found that while an entry-exit system promised “comprehensive immigration controls”, **the financial costs were “exorbitant” and the privacy and human rights impact “very significant”**. The option was therefore described – **in comparison to the planned Visa Information System – as too “risky and extremely costly to implement”**.⁹ The study also expressed concern about **the substantial time and resources required to collect and store biometric data from all third-country nationals arriving at the EU’s external borders**.¹⁰

Figure 1: Impact assessment for Entry-Exit System

	Financial costs	Opportunity costs for visa applicants	Retaliation costs for EU travellers	Reductions in business travel and tourism	Impact on privacy and human rights
No VIS	-	-	-	-	-
Entry-exit system (with biometrics)	√√√√	√√√	√	√	√√√
VIS without biometrics	√	-	-	-	√
VIS with biometrics	√√√	√√	√	√	√√√

√√√√ Exorbitant
 √√√ Very significant
 √√ Medium
 √ Small
 - No change from present situation

Source: European Policy Evaluation Consortium (2004: 6).

The €135 million EU Visa Information System went online in October 2011 (the cost of the compatible national systems were borne by the member states). In addition to introducing biometric identification and data retention for all visa applicants, it should be recalled that combatting “overstaying” was one of the original objectives of the system.¹¹ The first

⁷ European Policy Evaluation Consortium (2004) *Study for the extended impact assessment of Visa Information System*. Brussels, December 2004.

⁸ Ibid., p25.

⁹ Ibid., p8.

¹⁰ Ibid., p34.

¹¹ JHA Council Conclusions of 19 February 2004.

evaluation of how well the VIS is performing is due in October 2013;¹² with a review of the Decision to grant access to law enforcement agencies due one year later.¹³

2.1.2. The 2008 Commission communication on the next steps in EU border management

In February 2008, in its Communication "Preparing the next steps in border management in the European Union",¹⁴ the European Commission highlighted the lack of pre-frontier controls on non-visa nationals: "From a security angle, third-country nationals not requiring a visa are currently not subject to any systematic check for border control purposes before arriving at the border itself".¹⁵

The Commission also proposed using new technology to speed up border checks and ease entry to the Schengen area for "third-country nationals who frequently travel to and from the Schengen area for legitimate reasons, for example persons travelling on business".¹⁶ The Communication then set out a comprehensive "border package" comprised of:

- a "Registered Traveller" Programme (RT) for "low risk" travellers from third countries, including those that are subject to the visa requirement and those that are not, based on the pre-screening and collection of biometric data from applicants;
- the introduction of "Automated Border Control" (ABC) gates to speed the entry of "bona fide travellers" (EU citizens and pre-registered travellers);
- an "entry/exit system" (EES) providing for the "automatic registration of the time and place of entry and exit of third country nationals, both those that require a visa and those that do not, to identify overstayers";
- an Electronic System of Travel Authorisation (ESTA) to screen third-country nationals not subject to the visa requirement to verify that they fulfil the entry conditions before travelling to the EU.

Accompanying the Communication was an Impact Assessment,¹⁷ based on two studies by external contractors.¹⁸ This **estimated the total costs of the RTP and EES at approximately 113 million**.¹⁹ The Commission invited the Parliament and the Council to reflect on its proposals and announced that it was to launch a feasibility study into ESTA and report back the following year.

2.1.3. Towards the smart borders legislative package

The Commission's 'smart borders' Communication of 2008 was welcomed by the Council which, in order to assist the Commission in conducting an impact assessment and

¹² Article 50(3), Regulation 767/2008/EC of 9 July 2008 concerning the Visa Information System (VIS) and the exchange of data between Member States on short-stay visas (VIS Regulation).

¹³ Article 17(4), Council Decision 2008/633/JHA of 23 June 2008 concerning access for consultation of the Visa Information System (VIS) by designated authorities of Member States and by Europol for the purposes of the prevention, detection and investigation of terrorist offences and of other serious criminal offences.

¹⁴ European Commission (2008) *Preparing the next steps in border management in the European Union*. Brussels, COM(2011) 69 final, 13.2.2008.

¹⁵ Ibid., p4.

¹⁶ Ibid.

¹⁷ European Commission (2008) *Preparing the next steps in border management in the European Union - Impact Assessment*. Brussels, SEC(2008) 153 final, 13.2.2008.

¹⁸ GHK (2007) *Preparatory study to inform an Impact Assessment in relation to the creation of an automated entry/exit system at the external borders of the EU and the introduction of a border crossing scheme for bona fide travellers ('Registered Traveller Programme')*, op.cit.; Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit.

¹⁹ SEC(2008) 153, op.cit., p. 52.

developing a full legislative proposal, issued two questionnaires to the Working Party on Frontiers in 2009. The first sought to assess the appetite among the member states for a 'smart border' system centred on an EES;²⁰ the second requested statistics regarding border crossings and the entry and exit of TCNs.²¹ This exercise produced estimates suggesting that there are a total of 700 million Schengen external border crossings per year, of which 73 million are made by third-country national visa holders and 109 million are made by visa-exempt third-country nationals.

The Stockholm Programme of May 2010 invited the Commission to present proposals for "an entry/exit system alongside a fast track registered traveller programme with a view to such a system becoming operational as soon as possible".²² But although it had already drafted the legislation,²³ in November 2010 the Commission announced that it was conducting further impact assessments regarding both the EES and the RTP and would adopt the proposals "by mid 2011", with a view to the systems becoming operational in 2015.²⁴ This deadline was missed, however, and the informal JHA ministerial meeting in Sopot, Poland, expressed serious reservations about the planned proposals, inviting the member states to reflect upon "the added value in light of the technological implications (including in relation to data protection) and the cost".²⁵ At the same time, the European Data Protection Supervisor called on the Commission to both properly assess the use of existing systems such as VIS and SIS II and demonstrate the necessity for the entry-exit system.²⁶

Instead of its planned legislative proposals, the Commission responded in October 2011 with a new Communication on smart borders.²⁷ This contained three main justifications for the EES and RTP. First, air travel in Europe was expected to increase by 80% by 2030 and with it the pressure on the EU's external borders. The Commission took the view that the "increase cannot be addressed only by hiring additional border guards".²⁸ Second, the Commission claimed that visa "overstayers are the main source of irregular migration in the EU", despite acknowledging that no "reliable data" exists to substantiate such claims.²⁹ Third, the Commission suggested that "long queues, especially at airports, present a poor image to visitors to the European Union and both airport operators and airline companies consistently request faster and smoother passenger flows".³⁰

The Communication further suggested that the RTP would "speed up the border crossings of 4-5 million travellers per year" while providing a basis for enhanced investments in ABC

²⁰ Council of the EU (2008) *Presidency project for a system of electronic recording of entry and exit dates of third-country nationals in the Schengen area*. Brussels, 13403/08, 24.9.2008; Council of the EU (2009) *Questionnaire on the possible creation of a system of electronic recording of entries and exits of third country nationals in the Schengen area*. Brussels, 8552/09, 21.4.2009.

²¹ Council of the EU (2009) *Results of the data collection exercise*. Brussels, 13267/09, 22.9.2009.

²² OJEU (2010) *The Stockholm programme – an open and secure Europe serving and protecting citizens*. C115/27, 4.5.2010.

²³); Unisys (2010) *Final Report Cost Analysis of Entry-Exit & Registered Traveller Systems*, op.cit. p. 7.

²⁴ European Commission (2010) *Staff Working Document on the fulfilment of the 29 measures for reinforcing the protection of the external borders and combating illegal immigration adopted at the Justice and Home Affairs Council meeting, held on Brussels on 25 and 26 February 2010*. Brussels, SEC(2010) 1480 final, 26.11.2010.

²⁵ Polish Presidency of the European Union (2011) *Conclusions of the Informal Meeting of the Justice and Home Affairs Ministers in Sopot, 18–19 July 2011: Smart borders in the Schengen space*. Available from: <http://tinyurl.com/nkxxrf3> (last access September 2013).

²⁶ EDPS (2011) *Opinion of the European Data Protection Supervisor on the Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions on migration*, Opinion C(2011)-0445, 7 July 2011, available from: <http://tinyurl.com/n67lk2l> (last accessed September 2013).

²⁷ European Commission (2011). *Smart borders – options and the way ahead*. Brussels, COM(2011) 680 final, 25.10.2011.

²⁸ Ibid., p3.

²⁹ Ibid.

³⁰ Ibid., p4.

gates at major border crossing points.³¹ However, **the total estimated costs of the EES and RTP had increased tremendously from a little over €100 million in the 2008 impact assessment to €1,335 million (€1.3 billion) in 2011, with a potential saving of “about 30%” if the two systems were built on the same technical platform.**³²

The Commission also reported that it had disregarded the possibility of introducing an Electronic System of Travel Authorisation (ESTA) like that used by the USA to screen persons not subject to a visa requirement, stating that “the potential contribution to enhancing the security of the Member States would neither justify the collection of personal data at such a scale nor the financial cost and the impact on international relations”.³³ It should be noted that the proposed EES will require the collection of even more data (including biometrics) at an even greater cost.³⁴

2.2. The shape of smart borders: digitalising control

In February 2013 the Commission presented three legislative proposals on smart borders: one establishing the Entry-Exit System,³⁵ another establishing a Registered Traveller Programme,³⁶ and a third making the necessary adjustments to the Schengen Borders Code.³⁷ Given the path dependent process discussed in the previous point, however, it is important to stress that the terminology of “smart borders”, while compelling, can be misleading. The point of the EES and RTP is not to make the borders more intelligent, so to speak, but to further the digitalisation process enabled through the development of SIS II and VIS.

2.2.1. Proposed Entry-Exit System

The EES is **now justified solely on immigration policy grounds**: to provide “accurate data on travel flows and movements of third-country nationals”; to “automatically calculate the authorised stay and issue an alert to the competent national authorities when there is no exit record”; and to allow for “accurate and reliable identification and verification of non-visa holders”.³⁸ To achieve this, the EES will record the alphanumeric data (e.g. names, type and number of travel document(s), date and time of entry/exit) from all third-country nationals entering the Schengen area. After three years of operation biometrics (all ten fingerprints) will be included in the EES as well. Data will be retained for a period of six months in “ordinary cases” and for five years in “overstay” cases. Access to the database will be granted to authorities responsible for border control, issuing visas and authorities competent for verifying the identity of third country nationals within the territory of a Member State. However, the Commission’s proposal also states that the “technical development of the system should provide for the possibility of access to the system for

³¹ Ibid., p12.

³² Ibid., p14.

³³ Ibid., p7. See further Price Waterhouse Coopers (2011) *Policy study on an EU Electronic System for travel Authorization (EU ESTA)*. Brussels, February 2011.

³⁴ The USA’s ESTA system is estimated to have cost €50 million, with operating costs of a further €9 million per annum (ibid., p.190).

³⁵ European Commission (2013) *Proposal for a Regulation of the European Parliament and of the Council establishing an Entry/Exit System (EES) to register entry and exit data of third country nationals crossing the external borders of the Member States of the European Union*. Brussels, COM(2013) 95 final, 28.2.2013.

³⁶ European Commission (2013) *Proposal for a Regulation of the European Parliament and of the Council establishing a Registered Traveller Programme*. Brussels, COM(2013) 97 final, 28.2.2013.

³⁷ European Commission (2013) *Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 562/2006 as regards the use of the Entry/Exit System (EES) and the Registered Traveller Programme (RTP)*. Brussels, COM(2013) 96 final, 28.2.2013.

³⁸ European Commission (2013) *Proposal for a Regulation of the European Parliament and of the Council establishing an Entry/Exit System (EES)*, op.cit. p.4.

law enforcement purposes",³⁹ and makes explicit provision for law enforcement access based on a review of the EES' first two years of operation.⁴⁰

2.2.2. Proposed Registered Traveller Programme

The stated goal of the RTP is to "improve management and control of travel flows at the border substantially by reinforcing checks while speeding up border crossings for frequent, pre-vetted non EU travellers".⁴¹ The programme will be open to all third-country nationals who will be able to apply for RTP status at the consulates of Schengen member states. The criteria for acceptance into the RTP are aligned with those that must be met for the grant of multiple-entry visas as set out in the Schengen Visa Code. The application fee will be €20, falling to €10 if the application is made at the same time as the visa application.⁴² Successfully registered travellers will be issued with a token in the form of a machine-readable card containing only a unique identifier (i.e. application number), which is swiped on arrival and departure at the border using an automated gate. The ABC gate will read the token and the travel document (and visa sticker number, if applicable) and collect the fingerprints of the travellers, which would be compared to the data stored in the RTP's Central Repository and other databases, including the Visa Information system (VIS). If all checks are successful, the traveller is able to pass through the automated gate. If any checks are failed, a human border guard will be alerted. Application data will be held in the RTP for five years.

2.2.3. Reactions to the proposals

It is worth noting that the smart borders package has elicited significant internal debates, with the Commission's own Impact Assessment Board being quite critical of the initial work done by the services of DG Home (see further point 4.1.2.).

The Commission's proposals were also met with one of the most strongly worded opinions that the European Data Protection Supervisor (EDPS) has ever issued.⁴³ Having called on the Commission to demonstrate the necessity of 'smart borders' in 2011, the EDPS now states that:

There is no clear evidence that the Commission Proposals to create a smart border system for the external borders of the EU will fulfil the aims that it has set out... [O]ne of the stated aims of the proposals was to replace the existing 'slow and unreliable' system but the Commission's own assessments do not indicate that the alternative will be sufficiently efficient to justify the expense and intrusions into privacy.⁴⁴

The EDPS also questioned whether the extensive collection and storage of personal data envisaged by smart borders was necessary and proportionate in a "democratic society", arguing that the anticipated law enforcement access to the systems could not be granted before it could be shown that such "intrusion into the private lives of individuals is actually necessary".

The general trend to give law enforcement authorities access to the data of individuals, who in principle are not suspected of committing any crime, is a

³⁹ Recital 11.

⁴⁰ Article 46(4).

⁴¹ European Commission (2013) *Proposal for a Regulation of the European Parliament and of the Council establishing a Registered Traveller Programme.*), op.cit. p.4.

⁴² Annex III.

⁴³ EDPS (2013) *Opinion of the European Data Protection Supervisor on the Proposals for a Regulation establishing an Entry/Exit System (EES) and a Regulation establishing a Registered Traveller Programme (RTP)*, 18 July 2013.

⁴⁴ EDPS (2013) *Smart borders: key proposal is costly, unproven and intrusive*, 19 July 2013, Press Release 2013/08.

dangerous one. The EDPS strongly recommends that the precise added value of such access, compared with access to existing biometric databases, be identified.⁴⁵

The concerns of the EDPS were echoed in the opinions of the “Meijers Committee” of Experts on International Immigration, Refugee and Criminal Law⁴⁶ and the EU’s Article 29 Working Party on the Protection of Individuals with regard to the Processing of Personal Data which:

calls into question whether the Entry Exit System can be effective in achieving its own stated aims. Even if it were accepted that the proposed system provided significant added value, the opinion concludes that the added value of the Entry Exit System to achieving its stated aims does not meet the threshold of necessity which can justify interference with the rights under Article 8 of the EU Charter of Fundamental rights.⁴⁷

These concerns do not yet appear to have featured in the discussion on the proposals in the EU Council Working Party on Frontiers. The available documentation focuses instead on the issues of law enforcement access and (extended) data retention periods; the use of biometrics; interoperability between EES, RTP and other JHA databases; and the feasibility of the Registered Traveller Programme.⁴⁸

The crux of the current negotiations is that some member states would like to see biometrics included in the EES from the outset; some harbour serious concerns about the costs and feasibility; while many clearly see smart borders as a law enforcement tool. France has gone as far as suggesting that “care must be taken to ensure that the system does not become a simple statistical mechanism with a cost benefit analysis that would be highly unsatisfactory”,⁴⁹ while the Council legal service is on record as stating that the EES could be given a subsidiary (rather than principal) law enforcement basis⁵⁰ – a view that is entirely at odds with those of the European Commission, EDPS and national data protection authorities.

⁴⁵ Ibid.

⁴⁶ Meijers Committee (2013) *Note on the Smart Borders proposals* (COM(2013) 95 final, COM (2013) 96 final and COM (2013) 97 final), 3 May 2013.

⁴⁷ Article 29 Working Party (2013) *Serious concerns regarding proposed Entry Exit System*, Press Release, 17 June 2013. See also *Opinion 05/2013 on Smart Borders*, adopted on 6 June 2013.

⁴⁸ Council of the EU (2013) *Proposal for a Regulation establishing an Entry/Exit System (EES) to register entry and exit data of third country nationals crossing the external borders of the Member States of the European Union*, 12860/13, 13.7.2013.

⁴⁹ EU Council doc. 13806/13, op.cit.

⁵⁰ Ibid.

3. Digital border programmes in EU Member States and third countries

KEY FINDINGS

- The digitalisation of border controls is a growing trend at national level in the EU and in third countries. 11 EU Schengen Member States as well as Bulgaria, Romania and the United Kingdom, operate entry/exit-like systems. 12 EU or Schengen countries operate automated border-crossing schemes, in some cases combined with RTP-like systems. These are usually limited to selected airports.
- Systems similar in scope and/or scale to the measures envisaged in the smart borders package have encountered recurrent problems.
- The system of tracking entries and exits in the UK has experienced a major crisis in 2011, leading to the dismantling of the UK Border Agency, from which it is yet to recover. In the meantime, the UK RTP-like scheme IRIS has been discontinued and replaced with a pilot "Registered Traveller Scheme".
- The US-VISIT programme has operational entry functionality, but failed to produce an exit component despite widespread political and financial support.
- The US-VISIT programme has been termed 'high risk' by the US Government Accountability Office. They have consistently reported concerns about the programme's inefficient management, high costs, missed benchmarks, lack of result measures, and absence of transparency and accountability.

This section provides a brief survey of border programmes involving large-scale IT systems similar to those envisaged by the smart borders package in operation in EU Member States and selected third countries. It sets the stage for the comparative analysis of the technical feasibility and costs of the smart borders package provided in Sections 4 and 5. While the digitalisation of border controls is a growing trend both at the national level in the EU and in third countries, it is not as generalised as the smart borders proposals present it. In this respect, the introduction of EES and RTP would introduce structural changes in the way in which borders are controlled in the EU. It is also likely to make the problems encountered by border digitalisation initiatives more recurrent.

3.1. Digital border programmes in EU and Schengen Member States

Digital border programmes of the kind envisaged in the smart border package (entry/exit and registered traveller programmes) have become more frequent in EU and Schengen Member States. A general overview on the basis of currently available information shows that:

- **11 EU Schengen Member States**, as well as Bulgaria, Romania and the United Kingdom, **operate entry/exit systems**. Although they vary in scope and purpose, their functioning is proximate to the EES proposed by the European Commission. **Annex 1 provides a full state of play for EU 27 countries** on the basis of the questionnaire circulated in 2009 among Member State delegations by the Presidency.⁵¹
- **12 EU or Schengen (Norway) Member States operate automated border crossing schemes, in some cases combined with RTP-like schemes**. With the exception of Finland's Vaalimaa land border crossing point (BCP) on the border with Russia, these schemes are usually limited to air borders and available to travellers in specific airports. A full list is available in the Commission's impact assessment

⁵¹ Council of the EU (2009) *Questionnaire on the possible creation of a system of electronic recordings of entries and exits of third country nationals in the Schengen area*. Brussels, 8552/09, 21 April 2009 [8552/09 ADD1, 23 April 2009, 8552/09 ADD2 15 May 2009].

document accompanying the legislative proposal on the RTP.⁵² The list is also reproduced in the annex for reference.

The first point to stress, then, is that **while reliance on EES and RTP type schemes at the Member State level is significant and increasing, it is not systematic**. Secondly, there is a **degree of variation in the operational parameters of these national schemes** in terms of purpose, scope, targeted groups, data collected, retention period and access. Variation makes it sometimes **difficult to identify precisely which system does what**.

A good case to examine further in this regard is **the United Kingdom and its system for tracking entries and exit**. In the European Commission's impact assessment, the UK is not considered as a country that runs an EES-like scheme, while it was a forerunner in introducing an RTP-like scheme with its Iris Recognition Immigration System (IRIS) programme deployed in several airports around the country (and has recently been discontinued). Similarly, the UK delegation's response to the questionnaire on the possibility of creating an EES circulated by the Presidency in 2009 is that 'information [on this topic] is not available', **which is quite telling of the complexities involved in determining the perimeter and parameters of what a system designed to monitor entries and exits consists of**. The UK's current border control strategy consists in fact of two tracks: the 'e-Borders Programme', on the one hand, and a set of measures related to border checks consisting in particular of the Home Office Warnings Index (HOWI), the Secure ID Programme, and the so-called 'Level 2' pilot project:

- The e-Borders Programme involves the electronic collection and analysis of data on all travellers entering or leaving the United Kingdom. Collection is conducted under the responsibility of the UK Border Agency (UKBA). The data must obligatorily include service information (ferry, flight or train number, name of carrier, departure and arrival point) as well as advanced passenger information (API). Additional data may include Passenger Name Record data (PNR).⁵³
- Border checks involve three measures that have come under particular scrutiny in 2011 for their respective failures.⁵⁴ The Warnings Index is a watchlist against which travellers are checked to ascertain whether they are 'of interest' to UK authorities. Secure ID verifies the fingerprints of travellers at immigration control against biometric data collected during the visa application procedure. The 'Level 2 pilot' is a measure that allows border control officers to suspend the opening of the biometric chip on passports of EEA nationals, and the running of checks against the HOWI for EEA children in certain circumstances.

Data in the e-Border programme is not collected from travellers themselves (as is the 'spirit' of the EES and RTP) but from airlines, ferries and rail companies. Despite its name, then, the e-Border programme really constitutes a set of pre-border controls. The three border checks measures detailed above usually take place at the moment of border crossing and in the context of interactions between border guard officials and travellers, although they can be conditioned to pre-border operations. Secure ID, in this sense, is the equivalent of a combined VIS and EES, underpinning both the collection of biometric data during the visa application and the deployment of entry and exit checks.

There are of course limits to considering the UK as a good case study, not the least due to the specificity of its current and foreseeable position with regard to Schengen and the AFSJ. These limits are nonetheless outweighed by the fact that the border checks component of

⁵² European Commission (2013) *Impact assessment accompanying document to the proposal for a Regulation of the European Parliament and of the Council establishing a Registered Traveller Programme*. Brussels, SWD(2013) 50 final.

⁵³ For further details, see: House of Commons (2009) *The E-Borders Programme*. London: The Stationery Office, HC-170.

⁵⁴ For an overview of these measures and a forensics of the crisis, see: Independent Chief Inspector of the UK Border Agency (2012) *An investigation into border security checks*. London: The Stationery Office.

UK border control experienced in 2011 a severe crisis tied to the practical consequences of introducing more stringent registration of entry and exit requirements. It should be noted that a very recent critical report from the UK Independent Chief Inspector of Borders and Immigration, suggests that the e-Borders component is also experiencing similar difficulties.⁵⁵ The 2011 crisis led to the splitting and ultimately to the dismantling of the UKBA, five years after it was formed as an executive agency. **This is a particularly relevant occurrence to examine given that the United Kingdom sports one of the most sophisticated border control system among EU and Schengen Member States, while hosting the busiest transportation hub in the Union and its most important point of entry** (Heathrow airport, with 69.4 million passengers in 2011).⁵⁶ The crisis and its consequences will be detailed further under Section 4 of the study. The RTP-like IRIS scheme has also been terminated (as of September 2013 at Heathrow) “due to the age of the system” that makes it “no longer affordable” to maintain.⁵⁷ IRIS has been replaced with a much smaller scale pilot “Registered Traveller Scheme” which concerns short term visitors from the US, Canada, Japan, Australia and New Zealand, previously registered with IRIS and having completed a minimum of four trips to the UK in the last 52 weeks.

3.2. The US-VISIT programme

The United States Visitor and Immigrant Status Indicator Technology program (US-VISIT) collects, stores, and shares biometric and biographic data of visa applicants and other selected foreign nationals at US ports of entry (POE). Housed within the Department of Homeland Security (DHS), the multi-billion dollar programme's original purpose was to biometrically verify traveller identities at US air, sea, and land ports of entry and exit.

For US-VISIT entry processing, Customs and Border Protection (CBP) officers take digital scans of ten fingerprints and a digital photograph of eligible visitors. Entry data collected through US-VISIT is stored in the Automated Biometric Identification System (IDENT) database, which is meant to facilitate information sharing across federal, state, and local agencies tasked with immigration, border control, law enforcement, defence, and intelligence. Visitor data is checked against a number of databases including those related to “known and suspected terrorists, criminals, and immigration violators.”⁵⁸ **The entry portion of the program is operational at more than 300 POE.**⁵⁹ In the ideal, US-VISIT is also meant to capture biometric data from eligible foreign nationals exiting the US in order to detect overstays and other violations. However, **despite ample resources, the biometric exit portion of US-VISIT has been plagued with difficulties and is not operational at air, sea, or land POEs.**

The US-VISIT program was renamed The Office of Biometric Identity Management (OBIM) in March 2013. While much of the program remains the same as OBIM within DHS, the change relocated responsibility for overstays and the exit program—overstays went to Immigration and Customs Enforcement (ICE) and exit to CBP. These two aspects of the program have been the most difficult to implement. **The renaming of US-VISIT to**

⁵⁵ Independent Chief Inspector of Borders and Immigration (2013) ‘*Exporting the Border*’? *An inspection of e-Borders, October 2012-March 2013*. London: The Stationery Office, October 2013. For press coverage see e.g. Travis, A. (2013) ‘UK e-borders scheme ‘failing to stop terror suspects’’. *The Guardian*, 9 October 2013, available from: <http://tinyurl.com/nynvt2b> (last access October 2013).

⁵⁶ Eurostat (2013) ‘Passenger Transport Statistics’. In: *Statistics Explained*, available from: <http://tinyurl.com/qjkapum> (last access September 2013).

⁵⁷ UKBA (2013) *Iris Recognition System (IRIS)*. September 2013, available from: <http://tinyurl.com/pb7s2cf> (last access September 2013).

⁵⁸ Kraninger, K. and R.A. Mocny (2009) Testimony before the House Appropriations Committee, Subcommittee on Homeland Security hearing: *Biometric Identification*. Washington, D.C., 19 March 2009. Available here: <http://tinyurl.com/luqvho3> (last accessed October 2013)

⁵⁹ VISIT biometrics are also collected beyond POE, for example, the Department of Defense (DOD) and intelligence bodies “provide biometrics, including latent fingerprints, they collect from locations where terrorists have been,” Ibid.

'Biometric Identity Management' indicates the fact that its identity tracking capabilities are now used much more broadly across governmental sectors including defence, intelligence, and law enforcement, beyond their original travel purposes.⁶⁰ By relocating its most problematic elements, the change to OBIM also indicates the troubles that have plagued the creation of a *comprehensive* entry/exit system in the US.

The desire for a biometric entry/exit system in the US was strongly voiced by the Bush administration following 9/11 and was quickly translated into several pieces of legislation, including the PATRIOT Act,⁶¹ and became further ingrained after the 9/11 Commission's report called for a biometric entry-exit system "as quickly as possible."⁶² It should be emphasised, however, that there had been a congressional mandate to implement an entry/exit system in the US since 1996.⁶³ **Despite widespread political and financial support for entry/exit in the US, a number of obstacles and failures to achieve benchmarks have plagued the effort since its initial mandate in 1996.**⁶⁴ The US Government Accountability Office (GAO) has labeled the US-VISIT program "high risk" in terms of accountability and costs based on results for a number of reasons, including: "its size, complexity, mission criticality, and enormous potential costs, coupled with a range of program management control weaknesses, including an immature governance structure, lack of clarity about its operational environment, facility implications, and mission value."⁶⁵ While they note some advances have been made in some of these areas, the GAO continues to be critical of US-VISIT in many areas relevant to technological feasibility and cost. These critiques are also evident in regular congressional reports to the US Congress. The technical feasibility and costs issues are discussed below.

⁶⁰ Kraninger and Mocny (2009), op.cit.; Compare to: 18 Art. 1 (2) Regulation (EC) 1987/2006 and Art. 1 (2) Council Decision 2007/533/JHA."This allows – under certain conditions – to grant SIS II access to enforcement/criminal justice authorities such as Europol and Eurojust" (Art. 41,42 of the Council Decision)

⁶¹ Three post 9/11 pieces of legislation mandated the specifically *biometric* entry-exit system: *Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001*, Public Law 107-56, section 414 (October 26, 2001); *Enhanced Border Security and Visa Entry Reform Act of 2002*, Public Law 107-173, section 302 (May 14,2002); *The Intelligence Reform and Terrorism Prevention Act of 2004*, House Report 108-796, Section 7208.

⁶² National Commission on Terrorist Attacks upon the United States (2004) *The 9/11 commission report: Final report of the National Commission on Terrorist Attacks upon the United States*. Washington, D.C., pp. 389-390.

⁶³ Illegal Immigration Reform and Immigrant Responsibility Act of 1996, section 110.a.1, "Automated Entry-Exit Control System," U.S. Congressional Record—House (September 28, 1996): H11787.

⁶⁴ See: Hobbing, P. and R. Kowalski (2009) *The tools called to support the 'delivery' of freedom, security and justice: a comparison of border security systems in the EU and in the US*. Brussels: European Parliament, PE 410.681, pp. 14-24.

⁶⁵ United States Government Accountability Office (2009) *Despite Progress, DHS Continues to Be Challenged in Managing Its Multi-Billion Dollar Annual Investment in Large-Scale Information Technology Systems*. Washington, D.C., GAO-09-1002T, p. 27

4. THE TECHNICAL FEASIBILITY OF SMART BORDERS

KEY FINDINGS

- In discussing the technical aspects of the smart borders systems, it is important to keep in mind that so far there has been no technical feasibility study of the 2013 EES and RTP proposals. The work done by external contractors on behalf of the Commission in 2008 focused on assessing the respective merits and technical challenges of different policy options. There has been no further empirical verification of the models it used as recommended by the contractor.
- It is in fact foreseen that EU-LISA will conduct such a feasibility study, to be delivered in 2014. The reason for adopting legislation on smart borders before the full feasibility study has been produced is unclear.
- Having decided to pursue smart borders as a political objective in 2008, the Commission has focussed on “selling” the policies at the expense of impartially evaluating their necessity, feasibility and impact.
- A survey of the member states in 2009 suggested that the contractor had massively underestimated actual border crossing times but no further feasibility study was conducted.
- The EES feasibility study was based on the collection and storage of four fingerprints but although the EES proposal envisages the use of ten, the Commission has not updated the estimated border crossing times.
- If industry standards for ten print enrolments are incorporated into the model used by the European Commission to demonstrate the effectiveness of the proposed EES, the time it takes the majority of TCNs to enter the EU actually increases substantially as compared to the status quo.
- Contrary to the European Commission's claims about its proposed RTP, the 2008 feasibility study suggested that the crossing times for members of the RTP would actually be longer than for those of non-members entering through the EES.
- Despite referring frequently to the efficiency of national RTPs and ABC gates, no use-case models actually demonstrating significant benefits to travellers from the proposed EU RTP have been produced by the European Commission.
- The EU has just funded two expensive, large-scale demonstration projects examining the workflow and functionalities of ABC gates but the rush to agree the legislation means the findings will have no bearing on the design of EES or RTP.
- The implementation of US-VISIT has run into multiple technical feasibility issues concerning both the entry and exit components of the system. For the entry component, these include deployment at land ports of entry, as well as integration and interoperability issues between the different components of the system as well as with other large-scale IT systems. At this time, the exit component of US-VISIT is still not operational, and the Department of Homeland Security is still at the stage of running pilot projects, having failed to meet a number of congressional mandates and requirements. The US-VISIT experience shows that there cannot be a “one-size-fits-all” approach to systems operating on such a scale, an issue that the European Commission's impact assessment does not address.
- In the UK, the introduction of new procedures involving IT tools for border checks has resulted in 2011 in a crisis leading to the dismantlement of the UK Border Agency. These procedures resulted in increased waiting times at the border, further workload for frontline border officials, leading to the lifting of

checks at some of the busiest ports of entry into the country (and incidentally, in the case of Heathrow, into the EU). The case of the UK shows the limitations of the strictly technological assessment of feasibility accompanying the smart borders package, and demonstrates the need to take into account the labour aspects of border control work beyond calculations of average passage time at border checkpoints.

In discussing the technical aspects of the systems envisaged by the smart borders package, it is important to emphasise that **there has been so far no technical feasibility study of the envisaged EES and RTP strictly speaking**. The work done by external contractors on behalf of the Commission for this file has focused on assessing the relative merits of different policy options. **It is in fact foreseen that EU-LISA will conduct such a feasibility study, to be delivered in 2014**. In addition, the impact assessment work conducted by the European Commission has very little to say about other likeminded initiatives implemented at the national level in the EU or in third countries.

4.1. An overview of the Commission's assessment

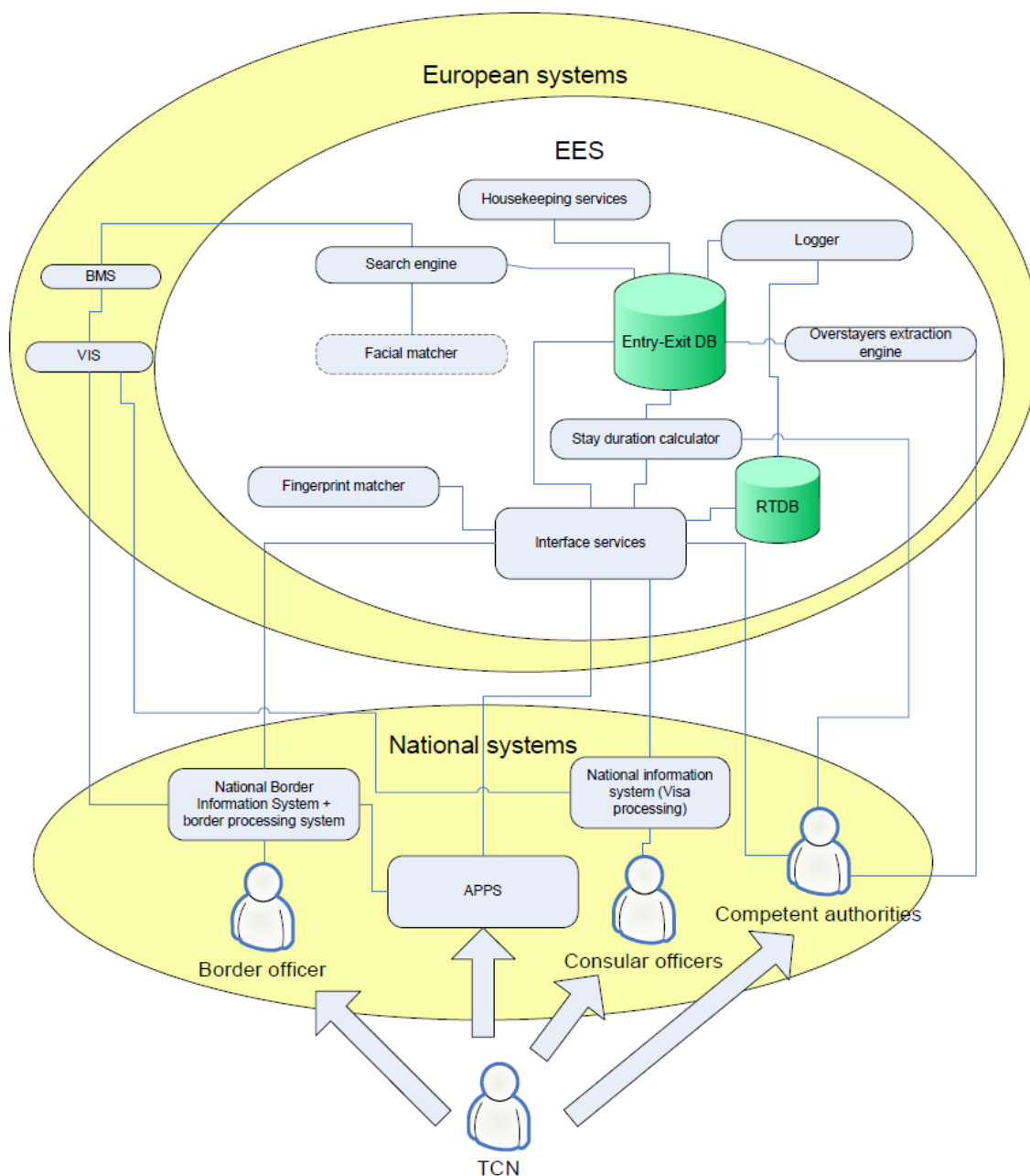
This section examines the way in which the European Commission has sought to assess the technical feasibility and impact of its proposals to establish an EU Entry-Exit System and Registered Traveller Programme. It explains the main technical challenges posed by the two proposals (section 4.1.1), considers the way in which the Commission has evaluated these challenges (section 4.1.2), and interrogates some of the core assumptions about the technical capability and efficacy of smart borders (section 4.1.3).

4.1.1. Technical challenges

As explained in Section 2.2, above, the fundamental premise of the Commission's proposals is that (a) an EU wide system to record detailed information about the identity, entry and exit of all third country nationals visiting the Schengen area is necessary to prevent these persons abusing their conditions of entry and (b) a subsidiary system providing faster border crossing for pre-vetted travellers is necessary to ensure that the EU remains attractive to "high value" visitors.

The technical challenges are substantial, requiring *inter alia* the development and implementation of two new, large-scale, biometric IT systems in the area of justice and home affairs (EES and RTP); connections to these systems at every Schengen external border crossing point and the consular representation of every participating Schengen state; the integration of these systems into the border management processes of the member states; and the seamless interoperability with at existing large-scale, biometric IT systems (VIS, EU Biometric Matching System (BMS), and possibly others). Concomitant to the technical ambition of the two proposals are significant management and budgetary challenges.

Figure 2: EES, RTP and existing border control processes⁶⁶



Legend: DB: database; RTDP: registered traveller database; APPS: automated pre-processing station.

4.1.2. Impact assessments and Feasibility Study

Since 2007 the European Commission has produced four impact assessments of its smart borders proposals (the Preparatory Study produced by GHK in 2007⁶⁷ and its own Impact

⁶⁶ Source: Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit. p.16.

⁶⁷ GHK (2007) *Preparatory study to inform an Impact Assessment in relation to the creation of an automated entry/exit system at the external borders of the EU and the introduction of a border crossing scheme for bona fide*

Assessments/Staff Working Papers of 2008 and 2013)⁶⁸ and one feasibility study (produced by Unisys in 2008).⁶⁹ The Impact Assessments have focused overwhelmingly on the justification for the proposals and it is difficult to escape the conclusion that having decided to pursue smart borders as a political objective in 2008 (see Section 2.1, above), the Commission has concentrated on “selling” the policies at the expense of impartially evaluating their necessity, feasibility and impact.

The 2008 Impact Assessment (produced to underscore the Commission's Communication on “Next Steps in Border Management”) proffered a “choice” between implementing smart borders or maintaining a “status quo” in which the EU is besieged by “illegal immigration”, “terrorism and organised crime” and unable to properly manage its borders or migration policy. To the extent that a whole range of visa policy options and police cooperation frameworks were overlooked, the Commission presented a false dichotomy. In turn the “sub-options” were incomplete (and logically undesirable) versions of the same smart border systems. By 2013 the option of doing nothing had disappeared entirely, leaving the Commission concerned only with scope and function of the new systems.

Table 1: Smart border policy options in 2008 and 2013 compared

Year	Policy option	EES sub-options	RTP sub-options
2008	1. Status quo 2. EES 3. RTP	1. Visa holders only 2. Visa exempt TCNs only	1. RTP for TCNs 2. RTP for EU citizens 3. ABC gates for EU citizens + minimum standards for Member State national schemes
2013	1. EES + RTP	1. EES 2. EES + biometrics 3. EES + law enforcement 4. EES + biometrics + law enforcement	1. Application procedure 2. Data storage 3. Vetting criteria 4. Border crossing procedure

The **European Commission Impact Assessment Board (IAB) and the LIBE Committee's Ex-Ante Impact Assessment Unit** have been critical of both the substance and process of these evaluations.⁷⁰ Like the EDPS (see Section 2.2.3, above),

travellers (‘Registered Traveller Programme’): final report and annexes, submitted 30 October 2007, available from: <http://tinyurl.com/om9jg28> (last access September 2013).

⁶⁸ European Commission (2008) *Commission Staff Working Document Accompanying the Communication on Preparing the next steps in border management in the European Union: Impact Assessment*, SEC(2008) 153, 13 February 2008; European Commission (2013) *Commission Staff Working Document: Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and of the Council establishing an entry/exit system to register entry and exit data of third-country nationals crossing the external borders of the Member States of the European Union*, SWD(2013) 47 final, 28 February 2013; European Commission (2013) *Commission Staff Working Document: Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and of the Council establishing a Registered Traveller Programme*, SWD(2013) 50 final, 28 February 2013.

⁶⁹ Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit..

⁷⁰ European Commission Impact Assessment Board (2013) *Opinion – DG HOME – Impact Assessment on a proposal establishing the entry/exit system to register entry and exit data of third-country nationals crossing the external borders of the Member States of the European Union (draft version of 16 February 2012)*, 2010/HOME/004; European Commission Impact Assessment Board (2013) *Opinion – DG HOME – Impact Assessment on a proposal establishing the entry/exit system to register entry and exit data of third-country*

they stressed the Commission's failure to adequately demonstrate the necessity of collecting biometric data from visa exempt TCNs in the EES. This problem was linked to a "regrettable" failure to analyse the impact that VIS and SIS II have had in terms of addressing the problems identified in the 2008 Impact Assessment.⁷¹ The IAB was particularly concerned about this point, stating (repeatedly) that the Commission needed to justify "the need to take immediate action before evaluation results of the [VIS] become available".⁷² The first such review is due to be delivered by EU-LISA to the European Commission by the end of 2013, with no clear indication as to when it will subsequently be made public. **It is worth noting in this regard that in accordance with Regulation (EC) 767/2008 Art. 50(3) the report should have been produced by October 2013.**

The technical challenges posed by the proposals to establish the EES and RTP were addressed in the Unisys feasibility study of 2008. Because the policy options had already been decided, the assumptions underlying the options for the design of the system and the methodology employed still appear robust. What should obviously be reassessed now that VIS is online is how the EES will work together with that system, particularly the biometric matching component (BMS), which was not yet operational when the study was produced.

Further questions arise in respect to the Commission's failure to follow-up the recommendations in the Feasibility Study to verify the timing and technology used in the traveller-processing scenarios.⁷³ While the Commission has funded two large-scale demonstration projects (Fastpass and ABC4EU) concerned with the "workflow and functionalities of Automated Border Control (ABC) gates" at a cost of well over €20 million,⁷⁴ the design of the EU's main smart border systems will have been fixed long before the results are delivered, undermining the potential of this expensive research to produce to evidence-based policy.

4.1.3. Core assumptions regarding the feasibility of smart border crossings

A key justification and core operational objective for smart borders is to speed up border crossing times by replacing some manual checks by border guards with automated processes. The EU Commissioner for Home Affairs announced the proposals with the claim that: "The use of new technologies will enable smoother and speedier border crossing for third country citizens who want to come to the EU".⁷⁵ Specifically, it is assumed that all third-country nationals (TCNs) will benefit from faster crossing times because the process of manually stamping TCN's passports will be replaced by automatic registration in the EES, while crossings for members of the RTP will be faster still because they will use the ABC gates being rolled out for EU citizens.

The European Commission has produced two sets of figures in relation to these claims. The 2008 *Unisys* feasibility assumed that crossings would take 35 seconds for visa holders, 26

nationals crossing the external borders of the Member States of the European Union (resubmitted version of 14 May 2012), 2010/HOME/004; European Commission Impact Assessment Board (2013) Opinion – DG HOME – Impact Assessment on a proposal establishing Registered Traveller Programme (RTP) (draft version of 9 March 2012), 2010/HOME/006; LIBE Committee Ex-Ante Impact Assessment Unit (2013) Initial appraisal of a European Commission Impact Assessment - Smart Borders Package: European Commission proposal on the entry/exit data of third-country nationals crossing the external borders of the EU, September 2013; LIBE Committee Ex-Ante Impact Assessment Unit (2013) Initial appraisal of a European Commission Impact Assessment - Smart Borders Package: European Commission proposal on a Registered Traveller Programme, September 2013.

⁷¹ EC Impact Assessment Board (2013a), op. cit., p.3.

⁷² EC Impact Assessment Board (2013b), op. cit., p.1.

⁷³ Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit. p.22-23.

⁷⁴ See "FASTPASS" project website, available from <https://www.fastpass-project.eu/> (last access September 2013). The "ABC4EU" project is not yet underway.

⁷⁵ European Commission (2013). 'Smart borders': enhancing mobility and security, Press Release, 28 February 2013.

seconds for visa exempt nationals and 15 seconds for visa holders.⁷⁶ *Unisys* described these estimates as “plausible” but also stated that the “numbers need further verification with real life samples and are also subject to change as technology evolves”.⁷⁷ The second set of figures is drawn from the 2009 Commission survey of the member states suggests that “the average time at air borders on entry for visa holders is 1 minute 44 seconds, for visa exempt nationals 1 minute 3 seconds and for EU citizens 15 seconds”.⁷⁸ Procedures at land and sea borders were even longer but given that the vast majority of entries and exits take place at air borders these are the more important statistics.⁷⁹ **In 2009 the Commission had thus discovered that *Unisys* had massively underestimated the time that TCN border-crossings actually take but made no attempt to reassess any of the models used in the feasibility study.**

Unisys also estimated the impact on its baseline crossing times of introducing a “manual entry-exit system”, “an automated entry-exit solution using automatic gates” and a “RT [registered traveller] solution” (the EU has opted for the “manual” EES solution with automatic gates reserved for EU citizens and members of the RTP).

Table 2: Estimated time impact of EES and RTP on border crossing times for TCNs

	Status quo MS Survey	Status quo Unisys	Manual EES Unisys	Auto EES Unisys	RT Unisys
ENTRY					
TCN Visa holder	1 min 44 sec	35 sec	30.5 sec	34.1 sec	31.08 sec
TCN Visa exempt	1 min 03 sec	26 sec	21.5 sec	23.8 sec	22.84 sec
EU citizen	15 sec	10 sec	N/A	N/A	13 sec
EXIT					
TCN Visa holder	1 min 11 sec	14 sec	21 sec	27.6 sec	25.44 sec
TCN Visa exempt	52 sec	14 sec	21 sec	27.6 sec	25.44 sec
EU citizen	15 sec	10 sec	N/A	N/A	13 sec

Despite the evident problems with the baseline (status quo) numbers, the Commission's 2013 Impact Assessment simply repeated *Unisys*' 2008 estimate that the Entry-Exit System would shave 4.5 seconds off the border crossings of all TCNs entering the EU. This estimate is the only evidence that the Commission's has provided to substantiate its repeated claim that its smart borders proposals will enable “smoother and speedier border crossings”. These claims are particularly problematic with respect to visa exempt TCNs, who make up

⁷⁶ *Unisys* (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit., p.17-18. See also more detailed explanation in Chapter 7.

⁷⁷ *Ibid.*, p.17.

⁷⁸ European Commission Impact Assessment on EES (2013), op. cit., p.64.

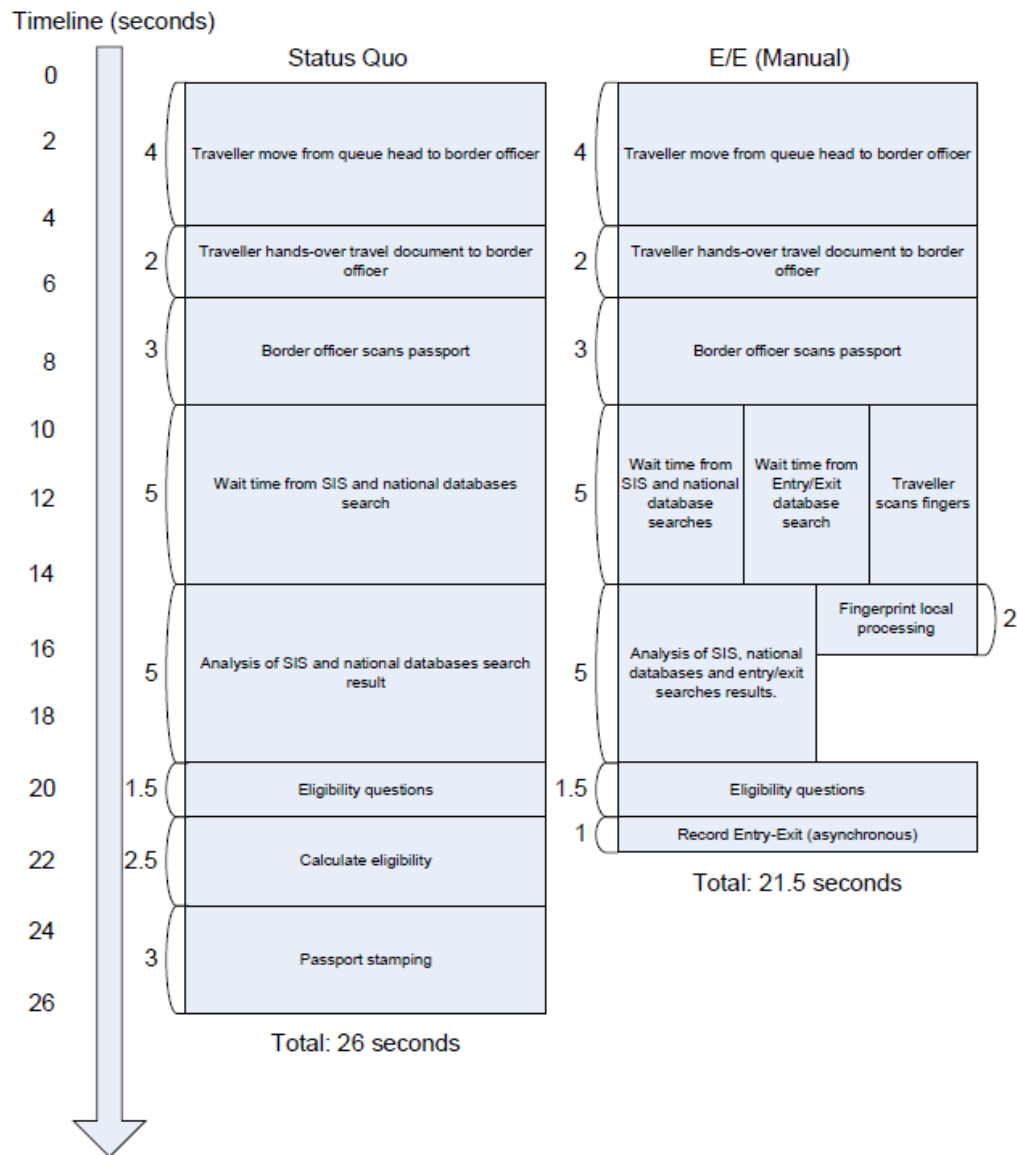
⁷⁹ The Commission estimates that 57 % of all EU external border crossings take place at the 20 busiest airports in the EU. See European Commission Impact Assessment on EES (2013), op. cit., p.16.

60% of the 182 million EU external border crossings by non-EU nationals reported by the member states.

Whereas TCNs subject to the visa requirement are already subject to fingerprinting upon entry in accordance with the VIS regime, the EES will introduce this requirement for visa exempt TCNs. It is logical to assume that the new fingerprinting process would extend the overall time it takes to process these entrants but *Unisys* and the European Commission believe that the reverse is true. Their claims rest on the assumption that the collection biometric data (all ten fingerprints) can instead be done in the same time that it currently takes to check entrants against the Schengen Information System: five seconds, with a further two seconds allowed for the successful processing of the scans. **The estimate that 4.5 seconds will be saved overall is based solely on the automated calculation of the duration of stay and the discontinuation of the practice of manually stamping passports but there are substantial reservations about doing this among the member states.**⁸⁰

⁸⁰ Council of the EU (2013) *Note from French delegation on the "smart borders" package*, 13806/13, 19.9. 2013.

Figure 3: Estimated impact of EES on border crossing times of visa exempt TCNS81



Crucially, the *Unisys* feasibility study of 2008 is based on the capture and storage by the EES of four fingerprints using what the biometric industry calls a “slap”.⁸² **It is questionable to say the least that the European Commission, having proposed to capture all ten fingerprints from visa exempt TCN’s in the EES,⁸³ is still using a model based on four prints to demonstrate both necessity and effectiveness.** It is an even more surprising omission given that the Impact Assessment for the RTP notes that “fingerprint verification against the VIS will start in 2014” and “will inevitably slow down the border check procedure by some tens of seconds per visa holder”.⁸⁴

While it is possible to verify the identity of individuals with ten print travel documents or profiles using a four print “slap” relatively quickly, the capture of all ten prints takes much

⁸¹ Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit. p.222, reproduced European Commission Impact Assessment on EES (2013), op. cit., p.66.

⁸² Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op.cit. p.157-161.

⁸³ Article 12, RTP proposal, op. cit.

⁸⁴ European Commission Impact Assessment on RTP (2013), op. cit., p.22.

longer. The US VISIT system introduced ten print enrolment in 2007 using *Livescan's Guardian* scanner, the technical specifications for which state "capture of left and right hands, and both thumbs, in under 15 seconds".⁸⁵ In 2011 *Suprema* claimed that its *Realscan* product offered "the world's fastest live [fingerprint] scanner"⁸⁶ but the maximum "capturing speed" it offers for all ten prints today is also 15 seconds.⁸⁷ **If these industry standards are used in the model developed by Unisys and published by the Commission to demonstrate effectiveness, the proposed EES substantially increases the time it takes the majority of TCNs to enter the EU.**

The European Commission's claims about the benefits of the proposed RTP are also problematic. The proposal has the "operational objective" of decreasing crossing times to "20-40 seconds on average".⁸⁸ It assumes that this is achievable because the "average processing time at the gate is 12 seconds" for eight other registered traveller programmes detailed in an Annex to its Impact Assessment.⁸⁹ However, the proposed EES differs markedly to the systems to which it is compared. Firstly, seven of the eight programmes with the 12 second average are limited to own nationals, neighbouring countries and/or selected third states whereas the proposed RTP will be open to all third countries. Secondly, none of the eight systems use such comprehensive checks as envisaged for members of the proposed EU RTP. Whereas existing programmes tend to check the travel document or token and a simple biometric identifier (facial or iris scans), the EU RTP envisages that its ABC gates will read the token, the travel document and collect the fingerprints of the travellers, and compare them to the RTP, VIS and other databases (see Section 2.2.2, above).

Moreover, as shown in Table 2, above, **the 2008 Unisys feasibility study actually suggested that the crossing times for members of the RTP would be longer than for non-members entering through the manual EES.** The Commission has not sought to explain the discrepancy between its claims and the Feasibility Study it commissioned, and has not commented any further these findings. It may well be the case, as the Commission notes, "that the use of an ABC system can drastically decrease waiting times, increase the throughput capacity of border crossing points and provide an effective tool with which to manage passenger flows".⁹⁰ But since no further feasibility study of how the proposed registered traveller programme will work in practice has been carried out, the fact remains that **no actual use case models demonstrating how the proposed EU RTP will benefit its members relative to the EES have ever been produced.**

4.2. Technical feasibility: lessons from other initiatives

4.2.1. Issues regarding the technical feasibility of US-VISIT⁹¹

Failures to utilise and integrate technologies have been crucial to border control policy discussions in the US. The failure of the Secure Border Initiative (SBI_{net}), which was called an "infamous example [of] waste and abuse" in a Congressional subcommittee, has, in

⁸⁵ Cross Match Technologies, Inc (2008) *L SCAN® Guardian™ Compact, Rapid Capture, Dual Use Criminal and Applicant Livescan and Fingerprint Enrollment System*, 24 January 2008, available from: <http://tinyurl.com/lyntse4> (last access September 2013).

⁸⁶ Suprema Inc. (2011) "Suprema wins UNDP project for supplying live fingerprint scanners to Bangladesh Police", *Suprema Newsletter Issue 20*, June 2011, available from: <http://tinyurl.com/lprmr2> (last access September 2013).

⁸⁷ Suprema Inc. (2012) *Live Scan & e-Passport Solutions*, available from: <http://tinyurl.com/k2xauwq> (last access September 2013).

⁸⁸ European Commission Impact Assessment on RTP (2013), op. cit., p.24-25.

⁸⁹ Ibid., p.65.

⁹⁰ Ibid., p.59.

⁹¹ In spite of the renaming to OBIM, the programme will be referred to as US-VISIT throughout this note because this was the name of the programme during the time period of relevant assessment and reporting.

part, been credited to a series of technological problems.⁹² This has led to questions about DHS' ability to leverage technology at the border and broader questions about large expenditures for developing very expensive, large-scale IT systems that may not work and that often indicate an inability to use pre-existing technologies for cross-purposes.⁹³ David Maurer, Director of the GAO Homeland Security team, testified that, **"DHS has struggled to deploy new technologies"**.⁹⁴ In the US experience there are clearly different technological feasibility issues pertaining to *entry* and *exit*. As such these will be discussed separately below.

4.2.1.1. US-VISIT Entry

Entry in US-VISIT is built upon existing infrastructures, particularly at air and sea POEs, thus it has been less challenging to implement than exit. The air POE entry option also benefits from relatively controlled airport environments for traveller screenings and from the fact that CBP officers pre-screen travellers with passenger manifests that are provided before they reach checkpoints at air and sea ports. Entries at land POEs are less controlled as travellers may arrive by foot or in a vehicle and the CBP officers have no advanced knowledge of arriving visitors.⁹⁵ Further, the US shares 7500 miles of land borders with Canada and Mexico in varied climates and terrain. The 170 POEs along the land borders account for the largest number of visitors to the US among all POEs but only about 11% of all US-VISIT eligible visitors. **While the majority of US-VISIT eligible visitors enter at airports, challenges at land ports remain an issue in the overall assessment and implementation of a comprehensive US-VISIT system.**

The technologies used at entry are not particularly sophisticated. Key technologies include computers, printers, digital cameras, and digital fingerprint scanners. At land POEs, the US-VISIT setups are housed in secondary inspection stations, and were typically integrated into pre-existing inspection buildings. **There have been technological and operational glitches involved in the integration of US-VISIT into existing land port facilities.** The GAO reported in 2006: "12 of 21 land POE sites we visited told us about US-VISIT related computer slowdowns and freezes which adversely affected visitor processing and inspection times...[and] compromise security, particularly if CBP officers are unable to perform biometric checks."⁹⁶ In some cases, CBP officers had to revert back to manual and paper-based processing.⁹⁷ There have also been operational challenges at land POEs, such as processing delays and facility space constraints, meaning that some visitors experience lengthy wait times, crowded facilities, and in some cases being turned away for inspection at a slower time or at a different facility. This is a long-standing problem at major US land POEs, but it is unclear how US-VISIT has impacted the problem because CBP evaluations have not sufficiently documented wait times across the transition.⁹⁸

The most widely cited technological accomplishment of the US-VISIT program is the move from a two fingerprint to a ten fingerprint system, which occurred in 2007. This is cited as a success in large part because it relates to the second more complicated component of entry processing: data storage, analysis and interoperability. The goal of the ten print transition was to further integrate IDENT and the FBI's Integrated Automated Fingerprint Identification System (IAFIS), which uses a ten print system. The collection of

⁹² US Committee on Homeland Security, House of Representatives (2011) Hearing *Homeland Security Contracting: Does the Department Effectively Leverage Emerging Technologies*. Washington, DC, July 15. Serial No. 112-39.

⁹³ Ibid.

⁹⁴ Ibid., p. 16.

⁹⁵ United States Government Accountability Office (2006) *US-Visit Program Faces Strategic, Operational, and Technological Challenges at Land Ports of Entry*. Washington, D.C., GAO-07-248, 14 December 2006.

⁹⁶ Ibid., p. 6.

⁹⁷ Ibid.; See also, Center for Transportation Research, the University of Texas at Austin (2005) *Assessing the Effects of US-VISIT RFID Technology Implementation on Vehicle and Pedestrian Crossing Times at DeConcini, Nogales, Ariz. Report No. 2 Pilot Data Collection and Analysis to Baseline Data*. Austin, Texas, November 2005.

⁹⁸ United States Government Accountability Office (2006), op.cit., pp. 25-32.

biometric data is considered useful only to the extent that it can be verified or compared with other data, and **ten print collection expanded the scope of databases that could be integrated into the US-VISIT system**. Increasingly VISIT data is now shared and checked against a number of databases beyond IDENT, including local law enforcement, FBI, and immigration benefits, amongst others.⁹⁹ DHS claims to use “intelligence-based advanced targeting techniques” using terrorist watchlists, domestic and international criminal records, and travel data compared against passport, visa and immigration data.¹⁰⁰ The ideal that targeted, risk-based, data analysis could apply “across the life cycle of a traveller’s journey,”¹⁰¹ means that **one of the main goals of DHS and VISIT contractors has been the interoperability and accessibility of data and sensitive intelligence across a variety of scales, technical systems, and jurisdictions**. DHS would like to “reduce the number of individual IT systems and bridge them and allow them to speak to each other.”¹⁰² Thus, one of the key tasks of the prime contractor for US-VISIT was to serve as the “Prime Integrator” for the entire system. One of the key tasks envisaged at the outset was the integration of at least nineteen pre-existing computer and data systems related to, amongst other things, law enforcement, immigration, terrorism, and travel.¹⁰³

In practice, the US-VISIT program has not easily integrated different systems and has not achieved seamless interoperability. The GAO reported in 2010 that while the VISIT system has largely transitioned to ten prints there has not been a seamless transition to interoperable databases or full operational capability: “the program has yet to fully develop and deploy a back-end system to match the 10-prints against other biographic or biometric data.” Further, “most responses from the FBI system are completed within 15 minutes; however, this system can require up to 72 hours for results.”¹⁰⁴ A memorandum of understanding on interoperability was signed by DHS, the Department of Justice, and the Department of State in August 2008. However, there is currently no interagency sharing of the Department of Defense, which has been noted as a flaw in the US biometric data interoperability.¹⁰⁵ As previously stated, this also raises the issue of the ways that VISIT (especially now as OBIM) has expanded beyond its original travel and transport remit; as it becomes enmeshed more broadly with data systems beyond this sector. For example: “DHS has been requested to authorize all domestic criminal justice agencies access to IDENT/IAFIS interoperability.”¹⁰⁶

4.2.1.2. US-VISIT Exit

A biometric exit system has not been implemented in the US case, and the exit programme has failed to meet a number of congressional mandates and requirements. As discussed above, in the 2013 transition from US-VISIT to OBIM the exit

⁹⁹ See Kraninger and Mocny (2009), op.cit.: “DHS will now also be able to conduct full searches against the FBI Unsolved Latent File, which, for example, allows DHS to match against prints lifted from crime scenes and those collected in Afghanistan and Iraq.”

¹⁰⁰ Walther, Kelli Ann (2012) Written testimony to House Committee on Homeland Security, Subcommittee on Border and Maritime Security hearing: *Eleven Years Later: Preventing Terrorists from Coming to America*. Washington, D.C., 11 September 2012. Available from: <http://tinyurl.com/maqq3zf> (last accessed October 2013).

¹⁰¹ Ibid.

¹⁰² Chertoff, Michael (2007) Testimony during the House of Representatives hearing on the fiscal year 2008 Department of Homeland Security budget. Washington, D.C., 9 February 2007, p. 22. Available from: http://epic.org/privacy/us-visit/chertoff_020907.pdf (last accessed October 2013)

¹⁰³ Accenture (2011) News Release: *Accenture Awarded Biometric Identity System Contract from U.S. Department of Homeland Security*. 21 December 2011.

¹⁰⁴ United States Government Accountability Office (2010) *Assessments of Selected Complex Acquisitions*. Report to Congressional Addressees. Washington D.C., GAO-10-588SP, p., 44.

¹⁰⁵ United States Government Accountability Office (2011) *DOD Can Better Conform to Standards and Share Biometric Information with Federal Agencies*. Report to Congressional Requesters. Washington, D.C, GAO-11-276.

¹⁰⁶ United States National Science and Technology Council (2011) *The National Biometrics Challenge*. Washington, DC, Subcommittee on Biometrics and Identity Management, 15 September 2011, p. 8.

programme was passed off to CBP, whereas OBIM is now a more generalised 'biometric identity management' programme that is integrated with intelligence and law enforcement even beyond the travel and immigration sectors. Leading up to the transition, there were a number of pilot programmes that attempted to test exit possibilities. In 2008, DHS proposed¹⁰⁷ that air and sea carriers be responsible for collecting, storing, and transmitting passenger exit biometrics to US-VISIT, which industry stakeholders argued was a job for the public sector.¹⁰⁸ In the US case, **commercial air and sea carriers refused to participate in exit data collection and sharing. In lieu of private sector participation, DHS conducted a series of exit pilot tests.**¹⁰⁹ This section discusses the relevant air and land exit pilots associated with US-VISIT and lessons learned.

- **US-VISIT Exit Pilots**

Air exit pilots

Two air exit pilots ran from May to July 2009, and assessed the potential integration of exit recording within pre-existing air facilities and operations. The pilots collected biographic data from machine-readable travel documents (or manually entered the data if the documents did not scan) and biometric data in the form of either the index and middle fingerprint (using a hand-held device) or a four fingerprint image (using a suitcase device) from a sampling of US-VISIT eligible travellers. After collection, passengers continued on the normal path. Collected data was uploaded to a "dedicated workstation" and then transmitted via a secure connection to IDENT to be matched against existing records.¹¹⁰ The pilots ran two different scenarios for locating exit processing in airports:

- The first air exit pilot tested passenger screening by CBP officers at departure gates at the Detroit Metro airport. Passenger biometrics were processed in the jetway after boarding passes were presented to airline employees and then prescreened by CBP officers for US-VISIT eligibility. The Detroit pilot with CBP officers checking in the jetway demonstrated that "CBP airport staffing levels would need to significantly augmented – doubled at least, if not more – to implement this model, as officers would have to cover both arrivals and departures."¹¹¹
- The second pilot tested passenger screening by TSA officials at the security checkpoint in the Atlanta International Airport. They used only the hand-held device because of limited space in the security checkpoint area. Document checkers prescreened every passenger entering the checkpoint for eligibility. Eligible passengers were taken to a processing station manned by TSA officials. Data was not collected from travelers 14 to 18 years old, the flight information of eligible travelers was not collected, and TSA did not do biometric collections during peak periods.

In the assessment of the air exit pilots, the GAO concluded that divergences from evaluation plans "restrict[ed] the pilots' ability to inform a decision for a long-term air exit solution." The following problems were identified:

¹⁰⁷ United States Department of Homeland Security (2008) Proposed Rules: Collection of Alien Biometric Data Upon Exit From the United States at Air and Sea Ports of Departure: United States Visitor and Immigrant Status Indicator Technology Program ("US-VISIT"). *Federal Register* 73(80): pp. 22065-22088.

¹⁰⁸ United States Government Accountability Office (2008) *Visa Waiver Program: Actions Are Needed to Improve Management of the Expansion Process, and to Assess and Mitigate Program Risks*. Washington, D.C., GAO-08-967.

¹⁰⁹ The Consolidated Security, Disaster Assistance, and Continuing Appropriations Act (Pub. L. No. 110-329) required DHS to conduct air exit pilots and specifically requested one pilot scenario in which airlines would collect the biometric exit data. DHS had to modify this pilot scenario after the airlines refused to participate.

¹¹⁰ United States Government Accountability Office (2009) *Key US-VISIT Components at Varying Stages of Completion, but Integrated and Reliable Schedule Needed*. Report to Congressional Requesters. Washington, D.C., GAO-10-13.

¹¹¹ Center for Immigration Studies (2010) *The Politics and Practicalities of Exit Controls Symposium Report*. Washington, D.C., p. 11. Available here: <http://tinyurl.com/mduy9b2> (last accessed October 2013)

- DHS did not satisfactorily demonstrate the security of data that was collected from visitors.
- There were instances where the exit screenings has to be abandoned at departure gates in order to avoid flight delays. The GAO suggests that there were other irregularities because there was a 'desire to minimize the pilot's impact on the airports, airlines, and travelers.' The reports did not adequately address the impact of biometric data collection on flight and boarding delays and missed flights.
- Important metrics were not reported in the evaluation, including: percentage of system downtime or inoperability, time needed to address device problems, time needed to determine and instruct eligible travelers, and effectiveness of airport signs.

The air exit pilots were decommissioned upon completion.

Land exit

Land biometric exit efforts have faced numerous challenges in the US, many of which mirror the difficulties of recording land entries: 7500 miles of border, varied terrain and climate, already crowded and busy departure points, limited facility space, no advanced information on travellers, no pre-existing exit infrastructure, and the fact that travellers can arrive on foot and in vehicles. **DHS regularly notes that implementing exit biometrics at land ports is considerably more difficult than exits by air, because it can significantly increase wait times at the border, facility retrofitting would be very costly, and because it requires close cooperation, information-sharing and technical interoperability with Canada and Mexico.** Below two relevant land exit pilots are discussed followed by general lessons learned.

Temporary Worker Visa Exit Pilot

The Temporary Worker Visa Exit Pilot began in December 2009 and required temporary, non-immigrant workers that entered the US at either the San Luis, Arizona or the Douglas, Arizona port of entry to exit from these same ports and to give biographical and biometric information during their exit at one of the unmanned kiosks designed for the pilot. The pilot was discontinued in September 2011 due to **a number of reported challenges, these include: users had trouble using and interpreting the kiosk procedure, CBP personnel had to devote significant time and resources to assist users even though it was meant to be automated and low-maintenance, the kiosks did not function reliably in part because they were located outdoors in harsh desert climates, and the layout of the land port made it difficult for CBP officials to monitor and ensure compliance.**¹¹² The pilot "demonstrated that DHS must evaluate carefully the **considerable time and resources that may be required by field personnel** in order to continually support and explain" the process.¹¹³

US-Canada Beyond the Border Action Plan exit pilots

As part of the *Beyond the Border Action Plan* between the US and Canada, the two countries promise to engage in border information sharing, including a system in which **entry information from one country could constitute the exit information from the other.**¹¹⁴ The first pilot ran between September 2012 and January 2013 at the Washington state/British Columbia and New York state/Ontario crossing points. DHS reported that the **pilot allowed them to match Canadian biographic entry data against US entry data.**¹¹⁵ In the *Beyond the Border* plan, a second phase beginning June 2013 will exchange

¹¹² U.S. Customs and Border Protection (2011) *Notice of Discontinuation of H-2A and H-2B Temporary Worker Visa Exit Program Pilot*. Federal Register 76(189): pp. 60518-60519. (FR Doc No: 2011-24716)

¹¹³ Ibid.

¹¹⁴ Government of Canada (2011) *Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness*. Ottawa, FR5-61/2011.

¹¹⁵ U.S. Government Accountability Office (2013) *Additional Actions Needed to Assess DHS's Data and Improve Planning for a Biometric Air Exit Program*. Washington, D.C., GAO-13-683.

the biographic data of third-country nationals and permanent residents of both countries at all common land crossing points. The third phase beginning June 2014 is supposed to expand the program to exchange data on *all* travellers at all automated common land border ports. The plan also discusses future plans for Canada to mirror the US air exit system with airlines required to submit passenger manifests on outbound international flights and 'exploratory work' on integrating the entry and exit information systems for marine, rail, and air. **If implemented, the US-Canadian scheme would not constitute a comprehensive system, as there are no plans for a similar system at the Mexico-US border where the majority of US land border crossings take place.** DHS has criticized the data collection efforts of the Mexican authorities, saying that their lack of data would make such an exchange difficult for the foreseeable future.¹¹⁶ **The US-Canadian pilot project is also based on biographic rather than biometric data exchanges.**

Biometric land exit challenges

The US experience with **land exit reveal significant challenges, many of which were known to officials before testing. Frequently cited issues are difficult environmental conditions, facility impacts and costs, and technological constraints.** For example, Deloitte contractors reported on "the specific challenges posed by the winter weather and environment on the northern border. Cold, dry air results in stiff, dry fingerprint ridges that do not image well. Outdoor use in this environment may require relatively expensive specialized equipment to support effective collection of biometrics, including ultrasonic sensors equipped with heaters."¹¹⁷ Similarly, during the Temporary Worker Visa Exit Pilot, CBP reportedly had to "ruggedize" the kiosks in order to withstand the harsh desert climate.¹¹⁸ These cases also reveal that there are **no 'one size fits all' solutions as the border environments vary from urban to rural areas and northern borders with severe winters to southern borders with desert climates.** In terms of facilities, in 2006, officials concluded that a biometric exit capability could not be implemented at land POEs **"without incurring a major impact" on facilities. It was determined that this would be "costly (an estimated \$3 billion), would require new infrastructure, and would produce major traffic congestion** because travelers would have to stop their vehicles upon exit to be processed," which was considered unacceptable.¹¹⁹

In terms of technology, another major constraint according to officials is that "the only proven technology available would necessitate mirroring the processes currently in use for...entry."¹²⁰ This mirror-image system for exit would have to include CBP officers examining travel documents, taking fingerprints, assessing digital photographs, and possibly directing persons to secondary inspection sites for additional questioning. **This mirror-image system is not feasible because it would require major infrastructural changes, it is cost prohibitive, and it would significantly impact travel times.**

The US-VISIT Program Office listed the following traits required of technologies for land exit processing: technologies could not require stopping or slowing down of visitors, degradation of service at exit lanes, additional traffic congestion, and visitor inconvenience. Additionally, they would have to be commercially available.¹²¹ Available biometric technologies were tested against these criteria, including retinal or iris scans and facial recognition. It was concluded that, **"Because the biometric solutions considered would have required an exiting visitor to slow down, stop, or possibly enter a POE facility, they were rejected.** Other alternatives, such as the use of a global positioning

¹¹⁶ Ibid., See Lipton, E (2013) U.S. Quietly Monitors Foreigners' Departures at the Canadian Border. *New York Times*, 21 May 2013. Available here: <http://tinyurl.com/m8nqg6v> (last accessed October 2013)

¹¹⁷ http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Federal/us_fed_Canada_Border_Security_Summit_061312.pdf

¹¹⁸ United States Government Accountability Office (2009), GAO-10-13, op.cit.

¹¹⁹ United States Government Accountability Office (2006), GAO-07-248, op.cit., p.7

¹²⁰ Ibid., p. 39.

¹²¹ Ibid., p. 42-43.

system, were rejected because they transmit signals that could facilitate surveillance of individuals, raising concerns about privacy.”¹²²

In the absence of a viable biometric exit solution, radio frequency identification (RFID) was offered as a possible alternative that would not require significant land facility changes, however RFID does not fulfil the mandate to verify identity because the ID is embedded in travel documents and cannot be directly attached to persons. Further, US-VISIT testing of RFID at land ports revealed performance and reliability problems, such as the inability of the automated readers to detect “the majority” of RFID tags.¹²³

US Exit: Enduring Problems

As of September 2013, CPB and ICE claimed that they have a fully functioning entry/exit system in place by using biographic departure information that air and sea carriers have been required to hand over to DHS since 2008.¹²⁴ This information is supposed to be compared to entry data in order to identify overstays. However, assessments of this system resolutely demonstrate that **DHS has not been able to efficiently or effectively identify overstays**. The purpose of the exit option is, reportedly, to be able to identify overstays and violations. **The technological questions about collecting exit data only matter to the extent that this data can be used for its reported purpose. It has been concluded that DHS does not have sufficient personnel to identify and deport overstay violators.** For example, the GAO reported that in 2011, DHS had a backlog of 1.6 million unmatched arrival records. These were reviewed and 863,000 records were closed, but new unmatched records piled up such that by **June 2013 there were more than 1 million unmatched arrival records in the DHS system.**¹²⁵ There are other problems associated with attempting to comprehensively track visitor movements with air and sea manifests. For example, situations in which visitors enter by air but exit by land.

The ongoing effort to implement a US-VISIT exit function reveals important lessons about the endemic challenges facing large-scale IT initiatives meant to operate across many jurisdictional, technological, and geographical boundaries. **The comprehensive factor presents an enduring and significant problem in terms of integrating scheduling, timing, contractors, personnel, jurisdictions, resources, cost estimates, and environmental and facility logistics.**¹²⁶ In translating lessons learned from the US to the European context, it must be taken into account that this enduring integration problem and repeated inability to meet benchmarks is occurring even in a single-country context and even with significant financial, political, and personnel investment in the program.

4.2.2. The limits of a strictly technological feasibility assessment: personnel issues with digital borders in the case of the UK

A second outstanding issue that can be raised in view of the European Commission's assessment of the technical feasibility of smart borders **concerns the limits of a strictly technological discussion of such initiatives.**

The smart borders package is premised on the interest of curbing human intervention in border checks: by automating some of the tasks performed by border guards during control

¹²² Ibid., See, Smart Border Alliance (2005) *US-VISIT Increment 2C Operational Alternatives Assessment—Final*. Rosslyn, Virginia, 31 January 2005. Available here: <http://tinyurl.com/lakfqbh> (last accessed October 2013)

¹²³ United States Government Accountability Office (2006), GAO-07-248, op.cit.

¹²⁴ U.S. Customs and Border Protection and U.S. Immigration and Customs Enforcement (2013) Written testimony: House of Representatives Committee on Homeland Security hearing: *Fulfilling A Key 9/11 Commission Recommendation: Implementing Biometric Exit*. 26 September 2013. Available here: <http://tinyurl.com/kfto53o> (last accessed October 2013)

¹²⁵ U.S. Government Accountability Office (2013) GAO-13-683, op.cit.

¹²⁶ United States Government Accountability Office (2009), GAO-10-13, op.cit., p. 29. They writes that the DHS US-VISIT program, “has separate schedules for managing individual components, as well as the prime contractor's schedule that supports all the components, that do not collectively provide a road map for delivering a comprehensive exit solution...Moreover, even the individual schedules governing the execution of what DHS described as unrelated components are not sufficiently reliable as standalone schedules.”

operations, such as stamping, calculating and providing information on authorised stay, or by automating border checks altogether through the RTP and increased reliance on ABC gates. In the words of the Commission's 2011 communication, smart borders 'would enable border guards to cope with the ever-rising number of border crossings without an unrealistic increase in human resources needed for border control'.¹²⁷

Apart from the analysis of times of passage and volumes of travellers detailed under 4.1. above, the **examination of the human implications of smart borders from the point of view of border control officers has not it seems been taken into consideration.** Police or border guard trade unions, which are the organisations closest to the field where border controls take place, were not involved as stakeholders during the consultation procedure leading to the legislative procedures.

There are however reasons to examine these matters, particularly in light **of the difficulties experienced by UK border control services in 2011**, which led to the dismantling of the UKBA. These difficulties involved **personnel issues in relation with the use of advanced IT systems in a context of increasing traveller flows** – the very assumptions that inform the European Commission's proposals for establishing smart borders.

As detailed in Section 3.1, the UKBA has since 2007 implemented a policy of tougher checks at the country's ports of entry, in several stages. The reported sequence of events that led to the 2011 crisis of UK border controls can be summarised as follows¹²⁸:

- From July 2007 onwards, UK Border Force officials have been required to check 100% of passengers arriving in the UK against the Home Office Warnings Index.
- The final report on the roll-out of Secure ID, initiated in November 2009, is issued in July 2010.
- Starting in December 2010, the UK Border Force initiates work on the so-called Level 2 pilot project as a possible, risk-based alternative to the system of full checks through HOWI and Secure ID. A trial is agreed upon by ministerial authority in July 2011, to take effect between 29 July and mid-September. Under the terms of this agreement, UK Border Force officials are allowed to use their judgement to decide whether to open the biometric chip in UK and EEA passports and whether to check children travelling with their parents or in group against the HOWI. The UKBA also proposed that checking the fingerprints of all non-EEA nationals requiring visas should no longer be done systematically during the trial period, but this initiative was refused by the concerned Ministers.
- The trial is reviewed on 14 September, leading to an agreement for an extension until 4 November.
- The Independent Chief Inspector for the UKBA (ICI) conducts an inspection at Heathrow Terminal 3 between 29 September and 19 October. He finds problems with the frequency at which Secure ID checks are suspended, which he communicates to the Chief Executive of the UKBA on 2 November.
- On 3 November, the head of the UK Border Force, Brodie Clark, is suspended pending an investigation pending an inquiry into the lifting of Secure ID checks. It is alleged that he admitted during a meeting with the UKBA Chief Executive that he had gone beyond the ministerial instructions the Border Force had been issued in the context of the Level 2 pilot trials. On 8 November, Brodie Clark leaves the UKBA, denying these allegations.

A more complete chronology, provided in the 2012 report of the ICI, is available in Annex 2.

¹²⁷ European Commission (2011) *Smart borders – options and the way ahead*, op.cit., p. 4.

¹²⁸ This summary is based on information collected in: Independent Chief Inspector of the UKBA (2012) *An investigation into border security checks*, op.cit. ; House of Commons (2012) *UK Border Controls*. London: The Stationery Office, HC 1647.

The main findings of the report are:

- that the sequence of events that led to the departure of Brodie Clark in November 2011 **were part of a broader pattern of difficulties experienced by the UKBA and UK Border Force** in handling the security requirements following the introduction of systematic HOWI and Secure ID checks, particularly during the busiest periods for UK ports of entry. The reports finds for instance that 'HOWI checks had not been carried out on EEA nationals travelling to the UK on Eurostar services [from France] since 2007', a measure that is 'likely to have resulted in approximately 500,000 EEA nationals not being checked against the WI'.¹²⁹ With regard Secure ID, the report identifies at least one occurrence prior to the introduction of the Level 2 Pilot Trial, between January and June 2011, where 'the biometric chip reading facility had been deactivated on 14,812 occasions at a number of ports', a procedure for which the UKBA 'was unable to explain definitively why these deactivations occurred'.¹³⁰
- That the situation developed as the result of a systemic breakdown in organisational communication and operational coordination, rather than as the result of a localised or individual occurrence of incompetence. The ICI finds 'there was no policy document or operational instruction in relation to Secure ID'.¹³¹ Suspensions of Secure ID were considered less as the result of the kind of risk-based assessment carried out as part of the Level 2 Pilot trial than to meet circumstances 'such as overcrowding in the immigration arrival hall [of Heathrow Terminal 3] leading to flights being unable to disembark passengers or unload baggage'.¹³² The UKBA, it further points out, has 'failed to put in place any effective management oversight in relation to Secure ID suspensions'.¹³³

It is notable that this situation did not find an echo in the European Commission's impact assessment accompanying the smart borders legislative package, all the more since the repercussions of the ICI report triggered further difficulties. The treatment of the Brodie Clark affair by the Home Office Secretary, in particular, incentivised Home Office personnel who were expected to take over border checks during the public sector pension strikes of 30 November 2011, to walk away, forcing the government to call upon military personnel.¹³⁴ The problems encountered by the UKBA cannot be attributed to external circumstances other than the periodical and general increase in flows of passengers and seem to be largely of its own making. They reflect a **ministerial and managerial failure to take into account and communicate on the impact of the accelerated introduction of large-scale IT instruments in terms of the working conditions of frontline officials**.

¹²⁹ Independent Chief Inspector of the UKBA (2012) *An investigation into border security checks*, op.cit., p. 10.

¹³⁰ Ibid, p. 14.

¹³¹ Ibid, p. 10.

¹³² Ibid, p. 11.

¹³³ Ibid, p. 12.

¹³⁴ Travis, A., Milmo, D., Syal, R. (2011) Border Agency's middle managers take revenge over passport checks. *The Guardian*, 25.11.2011, available from: <http://tinyurl.com/nkjdddj> (last access September 2013).

5. THE COSTS OF SMART BORDERS

KEY FINDINGS

- The impact assessment documents accompanying the smart borders proposals simplify the calculation of the costs associated with the initiative. They do not take into account lessons learnt from past likeminded initiatives in third countries, at the national level in the EU, or at the European level with SIS II and VIS.
- Every single one of these past initiatives has experienced long delays and escalating costs, due in particular to problems in programme management. Despite the establishment of EU-LISA, it is doubtful that the EU is equipped to avoid the problematic issues that are likely to materialise in the development of the smart borders systems.
- The estimated costs provided by the European Commission for the smart borders package are derived from a cost analysis study produced by external contractor Unisys in 2010. The contractor introduced several caveats in the study, and noted that the results of the cost analysis constituted a median value, with a 25% confidence range (plus or minus). This margin of error was not reported in the impact assessment documents accompanying the smart borders legislative package.
- The Commission claims that it can achieve a 30% cost-saving by building the EES and RTP on the same technical platform but has not provided any detail on how these savings can be achieved.
- Variables in the Commission's costs estimates that are likely to have an adverse financial impact include the administrative costs incurred by Member States in the running of the EES, and the costs of processing RTP applications in consular posts abroad, particularly those that are unused to dealing with a large volume of requests.
- Experience in developing IT systems on such a scale and with such a scope show that programme management issues can significantly raise costs. The US-VISIT programme, the UK e-Borders programme, and the EU's own SIS II and VIS programmes, have all encountered steering issues deriving from the intervention of multiple bodies in the development process, leading to difficulties in relation to the external contractors tasked with implementing the measures. In the case of the e-Borders programme, this has led to the UK Home Office engaging arbitration proceedings against the prime contractor, which issued a counterclaim to recover substantial damage for termination in excess of £500 million pounds.
- Current discussions on the smart borders package suggest that the possibility of disagreement over the scope and purposes of the systems exists, and that this may lead to outcomes similar to those experienced in the case of SIS II in particular. The likelihood of EU-LISA playing a mitigating role in programme management issues is unclear at this stage.

The following pages examine the financial soundness of the smart borders proposals. They first provide an overview and discussion of the Commission's costing of the proposals, before examining the factors that have influenced costs in likeminded initiatives (US-VISIT and UK e-Borders). In line with the overarching argument of the study, it is notable that the impact assessment documents provided by the European Commission simplify what is at best an extremely complex calculation, and limit the number of factors that might have an influence on increasing the costs of smart borders during development. In this regard, the impact assessment of smart borders does not take into account lessons learnt from past initiatives, either in third countries, at the national level in the EU, or at the European level with SIS II and VIS.

5.1. An overview of the Commission's costing

This section examines the way in which the Commission has assessed the costs of the proposed EU Entry-Exit System and Registered Traveller Programme. It provides a breakdown of the cost estimates for each of the systems (section 5.1.1), an analysis of the accuracy of those estimates (section 5.1.2) and considers the key variables and assumptions that will affect the actual expenditure (section 5.1.3).

5.1.1. The Commission's cost estimates

The estimated costs involved with setting-up the proposed EES and RTP are derived from a Cost Analysis study produced by *Unisys* in 2010.¹³⁵ As noted in Section 2, above, the estimated costs have risen substantially from €113 million in 2008, based on a "very rough calculation",¹³⁶ to €1,335 million (€1.3 billion) in 2010, based on the more detailed Cost Analysis. The tables that follow provide an overview of the total *Unisys* cost estimates as reproduced by the Commission in its 2011 Communication and a breakdown of the costs set out in the 2013 legislative proposals for EES and RTP. The estimates cover set-up costs and annual operating costs for the first five years.

Table 3: Overview of estimated costs in EU smart borders proposal

(in million €)	EES	RTP
EU development costs	37	43
MS development costs	146	164
EU Operational costs (five years)	70 (14 x 5)	100 (20 x 5)
MS Operational costs (five years)	370 (74 x 5)	405 (81 x 5)
Total	623	712

Table 4: Overview of estimated costs of EES development in EU smart borders proposal

Costs (€)	European Union		Member states	
	Development	Annual	Development	Annual
Hardware	2.764.000	14.000	23.070.000	24.000
Development	503.874	503.874	1.105.665	110.567
Infrastructure	13.872.390	12.062.948	0	0
Software	11.990.000	300.000	41.159.100	815.000
Administration	2.475.776	757.854	38.367.738	58.244.916
Office space	27.000	9.000	34.074.720	14.102.800
Contractor	5.632.564	536.027	7.807.615	549.586
Total	37.265.604	14.210.932	145.584.838	73.846.869

¹³⁵ Unisys (2010) *Final Report: Cost Analysis of Entry-Exit & Registered Traveller Systems*, op.cit.

¹³⁶ Unisys (2008) *Entry-Exit Feasibility Study: Final Report*, op. cit., p.19.

Table 5: Overview of estimated costs of RTP development in EU smart borders proposal

Costs (€)	European Union		Member states	
	Development	Annual	Development	Annual
Hardware	7.474.000	1.032.000	Hardware	7.474.000
Development	502.145	502.145	Development	502.145
Infrastructure	9.248.260	8.041.965	Infrastructure	9.248.260
Software	19.250.000	8.398.000	Software	19.250.000
Administration	2.658.448	1.960.641	Administration	2.658.448
Office space	27.000	9.000	Office space	27.000
Contractor	3.728.008	372.801	Contractor	3.728.008
Tokens	-	-	Tokens	-
Total	42.887.861	20.316.552	Total	42.887.861

5.1.2. The reliability of the Commission's estimates

The Cost Analysis provided to the European Commission in 2010 by *Unisys* was based on industry standard tools and methods and subject to the following caveat:

- Given the many assumptions made – given the level of uncertainty on the final solution, and the many options proposed – **the described approach led to estimates that we consider realistic, if not “real”, as we consider overall accuracy to fall in the surroundings of 20% to 30%.**
- This is well in line with industry's best practices and historical data. In fact, the relevant amount of options, alternative scenarios and **undefined constraints make it impossible to provide estimates much closer to the final figures.**
- **Therefore, all cost values in the following of this report should be considered a median value, considering circa 25% as confidence range, plus or minus.**¹³⁷

It is regrettable to say the least that this margin of error was not reported by the European Commission in any of the subsequent Communications and Impact assessments in which *Unisys*' estimates were reproduced. Instead the European Commission states, in respect to both EES and RTP, that: “All the cost parameters were established so that the costs were calculated on the basis of 'maximum value' estimates within a reasonable range meaning that the cost were calculated so that they should not overrun the budget in any circumstances”.¹³⁸ **Insofar as there is nothing in the methodology or anywhere else in the final (published) version of the *Unisys* Cost Analysis to substantiate these claims, the Commission appears to have wilfully misrepresented the level of accuracy ascribed to the estimates by the contractor.**

5.1.3. Key variables and assumptions

There are three particular variables among the cost estimates presented above which are likely to significantly affect the actual expenditure on the smart border proposals. The first is whether the EES and RTP are developed together rather than as two entirely separate systems. **In its 2011 Communication on smart borders the Commission announced that the total costs would be “about 30% lower if the two systems were to be**

¹³⁷ Unisys (2010) *Final Report: Cost Analysis of Entry-Exit & Registered Traveller Systems*, op. cit., p.14.

¹³⁸ European Commission Impact Assessment on EES (2013), op. cit., p.38; European Commission Impact Assessment on EES (2013), op. cit., p.34.

built together (i.e. on the same technical platform)". While the Commission says it will pursue this option, it has not provided any further details as to how or where these savings will be achieved relative to the existing estimates.

The second issue is the administrative cost to the member states of developing and implementing the new smart border systems, which represent 53% of the total estimated costs in respect to the EES and 48% in respect to the RTP: a total of €671 million. These estimates are inclusive of costs such as the staff effort required to develop and install the new systems and the border guards required to operate them *across all participating member states*.¹³⁹ The costs are derived from an estimate as to the total number of external border crossings for the Schengen area as a whole (rather than on a specific calculation for each member state) using a cost per border crossing model based on median administrative costs such as staff wages across the member states. With respect to the EES, *Unisys* assumed that a total of 167 million TCNs would cross the border in 2013, 100 million of whom were visa exempt, and factored in a compound growth rate of 10% per year. As *Unisys* explained "this mechanism does not allow to accurately assign [sic] the costs per individual Member State. This mechanism only makes sure that the figures are realistic for the total number of travellers".¹⁴⁰ Moreover, **any divergence from the assumptions in the actual number of people entering and exiting the Schengen area will have a significant impact in terms of total estimated cost, with local fluctuations in traffic volumes felt particularly acutely in the member states.** None of this has been properly explained in the Commission's Impact Assessments and it is difficult to see how the member states can have much confidence in the costs ascribed to them.

The third key variable is the number of travellers enrolled in the RTP, which has been estimated at "a maximum of 5 million new applications" every year.¹⁴¹ **Crucially it is assumed that the equipment used to process visa applications can be used to administer the RTP and that the application fee (€10/€20) will offset the processing costs, so there is no financial provision for either in the estimates set out above.** However, a majority of the member states have expressed reservations about the impact of the RTP on their consular services and some fear that they may not be able to cope with the additional workload required to administer the scheme.¹⁴² Given that the Commission has just commenced infringement proceedings against six member states for failing to process visa applications within the time frame stipulated by the Visa Code, these fears are well-founded. Moreover, **given that the take-up of the RTP may be much higher in countries not subject to the visa requirement (where Schengen consulates are unused to processing large number of applicants), the financial and administrative impact may be far greater than the Commission envisages.**

¹³⁹ Unisys (2010) *Final Report: Cost Analysis of Entry-Exit & Registered Traveller Systems*, op. cit., p.64.

¹⁴⁰ Ibid.

¹⁴¹ Ibid., p.16.

¹⁴² Council of the EU (2013) *Outcome of Proceedings of EU Frontiers Working Party, 8 October 2013* [document not yet referenced/published].

5.2. Costing: lessons from other initiatives

5.2.1. Ascertaining cost-effectiveness: difficulties experienced by the US-VISIT programme

The enacted budgets for US-VISIT total \$3,47 billion from 2003-2012.¹⁴³ It is difficult to precisely assess cost effectiveness across all of the components of US-VISIT, because **effective cost management and cost/benefit analyses have been an enduring problem for the programme.**¹⁴⁴ For example, the GAO has critiqued the 'visibility and traceability of investment dollars to individual projects,' which is identified as a roadblock for assessing cost effectiveness.¹⁴⁵ Further, the GAO has repeatedly reported that it is difficult to assess the programme in the absence of comprehensive plans for scheduling, executing, and assessing an integrated exit system. Without this integrated plan, "the program office cannot reliably commit to when and how the work needed to deliver the Comprehensive Exit solution will be performed, and it cannot adequately manage and measure its progress in executing the work needed to deliver it."¹⁴⁶ Thus, the GAO has repeatedly asked for improvements to the expenditure reporting on the VISIT program and for additional performance measures.¹⁴⁷ The issue of exit costing is particularly revealing as **the overall costs of a comprehensive entry/exit system could climb much higher than expenditures to date.** Estimates from officials have **speculated that a US comprehensive biometric exit program could cost anywhere between \$10 billion¹⁴⁸ and \$25 billion.¹⁴⁹** The consensus of a 2010 panel of US border and immigration experts was that, **"the costs of implementing and maintaining a biometric Exit program may outweigh the benefits."**¹⁵⁰

Without concrete and comprehensive assessment measures and due to the speculative nature of the future of the exit programme, statements from stakeholders about effectiveness and results generally only address the number of persons processed or turned away at entry. For example, "Since 2004, US-VISIT has processed more than 148 million biometric identifications and verification transactions" (2013, 66-7).¹⁵¹ There are numerous figures in this regard, but whether or not these numbers ultimately reflect an effective programme based on goals and expenditures has not been established.

More broadly, in the US context, these programmes should be understood in the context of proposals and debates over 'comprehensive immigration reform,' which devote significant attention to further hardening of border security and the ability to measure effectiveness and costs.¹⁵² These debates repeatedly cite the **lack of clear measures for evaluating**

¹⁴³ Calculated from US DHS budgets, available here: <http://www.dhs.gov/dhs-budget> (last accessed October 2013)

¹⁴⁴ United States Government Accountability Office (2004) *First Phase of Visitor and Immigration Status Program Operating, but Improvements Needed*. Washington, D.C., GAO-04-586.

¹⁴⁵ United States Government Accountability Office (2010), op.cit., p., 44.

¹⁴⁶ United States Government Accountability Office (2009), op.cit., p. 20.

¹⁴⁷ United States Government Accountability Office (2003) *Homeland Security Needs to Improve Entry Exit System Expenditure Planning*. Washington, D.C., GAO-03-563; United States Government Accountability Office (2007) *Homeland Security: Planned Expenditures for U.S. Visitor and Immigrant Status Program Need to Be Adequately Defined and Justified*. Washington, D.C., GAO-07-278; United States Government Accountability Office (2007) *U.S. Visitor and Immigrant Status Program's Long-standing Lack of Strategic Direction and Management Controls Needs to Be Addressed*. Washington, D.C., GAO-07-1065.

¹⁴⁸ Center for Immigration Studies (2010), op.cit., p. 3.

¹⁴⁹ Lipton (2013), op.cit.

¹⁵⁰ Ibid., p. 2.

¹⁵¹ <http://www.dhs.gov/sites/default/files/publications/MGMT/FY%202014%20BIB%20-%20FINAL%20-508%20Formatted%20%284%29.pdf>

¹⁵² The current version of the comprehensive immigration reform bill (S. 744) states that biometric exit must be in place at the ten busiest US international airports within two years of the bills enactment and at the 'Core 30' airports within six years after evaluations of the initial ten airport effort. Within six years, the bill mandates a *plan* to expand biometric exit to all major air, sea, and land exit points. The bill passed the Senate in June 2013, however it is broadly believed that the bill will not survive to pass the House of Representatives.

the effectiveness and costs of border security. As the Chairman of the House Committee on Homeland Security stated in February 2013: "Until the administration creates a comprehensive national strategy to secure our borders that includes a reasonable definition of operational control that we can measure, then we cannot quantify success or failure."¹⁵³

5.2.2. Costs and programme management issues

Project management issues have revealed themselves to be a key driver for increased costs and delays in the implementation of large-scale IT initiatives similarly in scope or in spirit to the proposed smart borders systems. The EU itself has faced such issues in the development of SIS II in particular. These issues are in no small part linked with the fact that **managing the development of IT systems involves interventions from a multiplicity of interested parties**, and the **handling of private contractors**.

The three cases discussed in this section (US VISIT, UK e-Borders, SIS II) suggest that project management issues arise in particular in the handling of private parties contracted to implement large-scale IT systems, especially when the number of bodies able to intervene into the implementation process is significant, which results in lines of responsibility and accountability being blurred.

At this stage, it is noteworthy that **the impact assessments accompanying the smart border package do not include considerations regarding these matters.** Expectations seem to be that unlike SIS II and VIS, the technical development of the EES and RTP will begin only after a political agreement has been found on the scope and purposes of the systems, and that the establishment of EU-LISA will ensure adequate management of the projects. **There are however indications that a situation similar to the SIS II saga might develop**, a prospect discussed in point 5.2.2.4.

5.2.2.1. US-VISIT

The primary contract for US-VISIT (\$10 billion over 10 years) was awarded in May 2004 to an Accenture-led alliance of companies, called the 'Smart Border Alliance,' which includes Raytheon, The Titan Corporation, and SRA International. 60% of the US-VISIT workforce are contractors.¹⁵⁴ In the US case, the prime contractor was meant to serve as "the prime integrator" of the entire US-VISIT program. That is, the responsibility for forging integrations across governmental sectors and technological systems was tasked to contractors. In light of the contractors as integrators role in large-scale IT initiatives, it bears noting that the GAO has cautioned that in their assessments of DoD and DHS acquisitions, "using contractors to perform certain functions can place the government at risk of transferring government responsibilities to contractors, and potentially result in loss of government control over and accountability for policy and program decisions."¹⁵⁵ **The Accenture US-VISIT contract was labelled a "problem contract" in a 2006 House of Representatives oversight report called *Waste, Abuse, and Mismanagement in Department of Homeland Security Contracts*. The report identified a 'lack of defined requirements, wasteful spending, and mismanagement' as problem areas.**¹⁵⁶ Assessments of the contract emphasize continual management problems.¹⁵⁷

¹⁵³ McCaul, Michael (2013) Statement at the hearing of the United States House of Representatives, Committee on Homeland Security: *A New Perspective on Threats to the Homeland* Washington, D.C., 13 February 2013, p.2. Available from: <http://tinyurl.com/k4rzo6l> (last accessed October 2013)

¹⁵⁴ United States Government Accountability Office (2010), GAO-10-588SP, op.cit., p, 25.

¹⁵⁵ Ibid., p 26

¹⁵⁶ US House of Representatives (2006) *Waste, Abuse, and Mismanagement in Department of Homeland Security Contracts*. Washington, D.C., p. 19.

¹⁵⁷ US Government Accountability Office (2009) *Despite Progress, DHS Continues to Be Challenged in Managing Its Multi-Billion Dollar Annual Investment in Large-Scale Information Technology Systems*. Washington, D.C., GAO-09-1002T.

5.2.2.2. UK e-Borders: the costs of contractor mishandling

The **difficulties experienced by the UK Home Office and UKBA in the implementation of their large-scale IT schemes** for border control is a second case in point. This concerns the **implementation of the e-Borders programme**, which as mentioned previously have very recently made the headlines following a critical report from the ICI. In 2007, the **Trusted Borders consortium won the contract for the delivery of the e-Borders scheme, for a total amount of £650 million**. The prime contractor was Raytheon SL, and the consortium comprised Steria (also contractor with the European Commission for SIS II and VIS, interface development), Serco (infrastructure and service management), Accenture (training of end users and measurement of business benefits), Detica (intelligence and analytics service), QinetiQ (security accreditation and human factors) and Capgemini (development of business architecture).¹⁵⁸ Trusted Borders took over from IBM, which had implemented the forerunner to e-Borders, Project Semaphore.

Among the goals set to the consortium was the objective that by December 2010, e-Borders should collect 'details of 95% of passengers and crews' at UK ports of entry.¹⁵⁹ **This goal is still not met at the time of writing**. Difficulties started emerging when carriers that are supposed under e-Border to provide data on their passengers and especially the airline industry, drew the attention of the Home Affairs Committee of the House of Commons to the problems they were experiencing with both the UKBA and the Trusted Borders consortium. According to the airline industry, 'lessons learned from the [...] Semaphore project had not been fed through to the contractors', resulting in Trusted Borders developing an IT system for e-Borders that would not be compliant with industry standards, and the carriers stating that they 'had lost trust in the service provider'.¹⁶⁰ On the UKBA side, it is reported that dissatisfaction with the Trusted Borders consortium grew 'due to delays in the delivery of key milestones'.¹⁶¹

These difficulties led the UKBA to **terminate for cause** its contract with Raytheon SL on 22 July 2010. It subsequently **initiated arbitration proceedings**, which are still ongoing at the time of writing. In a counterclaim, Raytheon SL is seeking to recover 'substantial damages for wrongful termination', as exposed by the company's chief executive Robert Delorge in a letter to the chairman of the Home Affairs Committee of the House of Commons, **in the excess of £500 million**.¹⁶² Delorge states for his part that the subject of the arbitration proceedings is the 'various breaches of contract by the UKBA', arguing that his company's failure to deliver satisfyingly resulted from the agency 'never [being] able to settle upon the scope of its requirements' for the second phase in the implementation of e-Borders.¹⁶³ In its Annual Report and Accounts 2010-11, the UKBA acknowledges that 'due to the complexity of [its] claim and RSL's counterclaim', it is 'unable to quantify the amount of' what it considers 'a contingent liability'.¹⁶⁴ In the meantime, the agency has novated a contract between Raytheon SL and one of the subcontractors in the Trusted Borders consortium, providing the former with **an indemnity of £5 million** 'against losses arising from the infringement of intellectual property rights'.¹⁶⁵

The difficulties encountered by the e-Borders programme are relevant to the discussion on the costs of smart borders because of the scale and comparable costs of the project, even if the specific objectives were different. The **comparison has two advantages**: it **provides an estimate for the cost of failure** and of actual conflict with a contractor (£5 million for

¹⁵⁸ Trusted Borders (2007) 'Trusted Borders signs contract with UK Home Office for e-Borders project'. London, press release, 14 November 2007, available from: <http://tinyurl.com/lrh62q> (last access September 2013).

¹⁵⁹ House of Commons (2009) *The E-Borders Programme*, op.cit., p. 8.

¹⁶⁰ Ibid, p. 9.

¹⁶¹ Chief Inspector of Borders and Immigration (2013) 'Exporting the Border' ?, op.cit., p. 14.

¹⁶² Raytheon UK (2011) *Request for information on the e-Borders Programme*. London: House of Commons, 3 August 2011, available from: <http://tinyurl.com/kfj765g> (last access September 2013).

¹⁶³ Idem.

¹⁶⁴ UKBA (2011) *Annual Reports and Accounts 2010-11*. London: The Stationery Office, HC 1242, p. 92.

¹⁶⁵ Idem.

the time being, and up to £500 million should the arbitration proceedings result in an unfavourable outcome for the UKBA) and **helps identify the pattern of issues that led to this conflict**. In this particular case, problems included the **transfer of lessons learnt and knowledge from one contractor to the other**, as well as **steering issues tied to changing and/or unclear policy priorities** (aggravated it seems by the change of governmental majority in May 2010).

5.2.2.3. SIS II: multiple steering bodies and contractor issues

The e-Borders situation, incidentally, is not dissimilar from the EU's own experience with SIS II. Given the intensive scrutiny that the last stages of SIS II development have been submitted to, including from the LIBE Committee, the overview provided here will be brief and focus on three points.

Firstly, it is quite clear that the **problems encountered by the SIS II programme originated in the decision to start the technical development of the system before a political agreement could be found on its scope and purpose**. This meant that constant adjustments had to be made to development parameters as negotiations among the Member States and between the co-legislators ebbed and flowed.

Secondly, the subsequent delays experienced in the development of the system **left ample space for various formal and informal bodies to intervene in the management of the project**. A study published in 2011, two years before SIS II was eventually rolled out, found that there were at the time at least 12 bodies providing intervening in the steering of the project.¹⁶⁶ Three of these groups (the SIS II Task Force, the Friends of SIS II and the Global Programme Management Board) were initially informal creations aimed at involving and committing Member States that were eventually integrated within the management of the SIS II programme.

Thirdly, the **multiplication of formal and informal interventions into the management of the SIS II programme led to problems in handling relations with the contractors**. As noted by others, the technical specifications delivered to the contractors (HP and Stéria) following the adoption of the SIS II legislation in 2006 did not match the initial parameters under which technical development had started.¹⁶⁷ Following the failures of a series of critical tests in 2008, experts from a group of Member States led by Germany, France and Austria developed an alternative technical proposal involving the development of new functionalities on the basis of the SIS I architecture. The Council ultimately decided to continue with the development of SIS II, while retaining the so-called 'SIS 1+RE' as a fallback option – a decision that led the French authorities to launch a call for tender in April 2009, which was eventually won by the prime contractor for SIS I, French company ATOS.¹⁶⁸

5.2.2.4. Foreseeable issues for EES and RTP: is EU-LISA the panacea?

The question of **whether the steering difficulties** that have plagued the US-VISIT programme, the UK e-Borders programme, as well as the development of SIS II and VIS **might arise should the smart borders package be adopted have to be addressed**.

Ongoing discussions on the package suggest that the potential for disagreement over the purpose and scope of the EES and RTP exists. These concern **in particular the EES and the possibility to grant law enforcement access to this system**. In a series of recent meetings of the Frontiers Working Party and Standing Committee on Frontiers, Immigration and Asylum (SCIFA), Member State representatives have formulated diverging expectations and reservations.¹⁶⁹ In July 2013, the incoming Lithuanian presidency has stated its

¹⁶⁶ Parkin, J. (2011) *The Difficult Road to the Schengen Information System II: The legacy of 'laboratories' and the cost for fundamental rights and the rule of law*. Brussels: CEPS, April 2011.

¹⁶⁷ Ibid, p. 17.

¹⁶⁸ Ibid, p. 16.

¹⁶⁹ See in particular: Council of the EU (2013) *Outcome of proceedings of Working Party on Frontiers/Mixed Committee (EU-Iceland/Lichstenstein/Norway/Switzerland) on 25 July 2013*. 12860/13, Brussels, 31.07.2013;

intention to move forward with 'the request expressed by a large majority of delegations in previous meetings to introduce in the draft Regulation establishing an Entry/Exit System (EES) provisions allowing access to the EES for law enforcement purposes', despite the Commission restating its reservations as to 'how access for law enforcement purposes could be made a primary objective of the EES'.¹⁷⁰ The Council Legal Service suggested in this respect that the EES could be given 'a law enforcement objective on a subsidiary, and not a principal, basis'.¹⁷¹ At the SCIFA meeting of 24 September 2013, however, 'a number of delegations' stressed that 'the necessity and proportionality of granting access to the EES for law enforcement purposes should be carefully and duly assessed'.¹⁷² The Commission further 'reiterated the need for a clear justification for granting access to the EES for law enforcement purposes and emphasised **that the costs of the EES could not constitute in itself a justification for expanding the objectives of that system**'.¹⁷³ In a note circulated to the Frontiers Working Party on 19 September 2013, the French delegation further indicated it was 'sorry that discussions in the Working Party on Frontiers were already focusing on an "article by article" reading, whilst **agreement had yet to be reached on some cross-cutting issues**, such as giving the law enforcement authorities access, using biometrics [...] or even interoperability between the systems (EES, RTP, VIS, EURODAC and SIS)'.¹⁷⁴ It seems, then, that **the discussion on the smart borders package is moving ahead of itself in the Council, with little agreement on first principles such as the actual purposes and scope of both EES and RTP**. This situation is strongly reminiscent of what happened in the case of SIS II and VIS where agreement on developing the systems preceded agreement on what these systems should actually do.

In light of these disagreements, it may be tempting to suggest that the key difference between the development of SIS II and VIS and the possible development of EES and RTP is **the establishment of EU-LISA**. While it may well be the case that the involvement of the agency smoothes out some of the programme management issues that have plagued previous EU initiatives, the temptation to turn this body into a panacea should be avoided. **The capacity of LISA to resist the pressures that inevitably arise in the context of developing large-scale IT systems is not yet proven**. It also seems that **the intended management structure for the development of EES and RTP envisaged by the European Commission would mirror what has been done for SIS II**. During the July 2013 meeting of the Frontiers Working Party, the German, Dutch and Polish delegations 'stressed that Member States should be involved in the development of the technical specifications', and the Commission in turn 'confirmed that Member State experts would indeed be involved in a similar way as for SIS II, both when the Commission would prepare the functionalities and when LISA would proceed to prepare the technical specifications'.¹⁷⁵ **That SIS II should be considered an example to follow in terms of programme management is, in light of the evidence available on how the development of this system went astray, questionable**. Similarly, it is important to make sure **that the principle of developing the EES and RTP is not agreed upon in order to justify the existence of EU-LISA**. The discussion is indeed likely to arise given that the tasks involved in the management of existence EU large-scale IT systems is a fairly meagre portfolio.

Council of the EU (2013) *Outcome of proceedings of Working Party on Frontiers/Mixed Committee (EU-Iceland/Lichtenstein/Norway/Switzerland) on 24-25 July 2013*. 12861/13, Brussels, 31.07.2013; Council of the EU (2013) *Outcome of proceedings of Strategic Committee on Immigration, Frontiers and Asylum/Mixed Committee (EU-Iceland/Lichtenstein/Norway/Switzerland) on 24 September 2013*. 14066/13, Brussels, 01.10.2013.

¹⁷⁰ Council of the EU 12861/13, op.cit., p. 2-3.

¹⁷¹ Council of the EU (2013) *Note from the French delegation to delegations: the "smart borders" package*. 13806/13, Brussels, 19.09.2013, p. 4.

¹⁷² Council of the EU 14066/13, op.cit., p. 2.

¹⁷³ Idem.

¹⁷⁴ Council of the EU (2013) 13806/13, op.cit., p. 1.

¹⁷⁵ Council of the EU 12860/13, op.cit., p. 6, footnote 17.

6. CONCLUSIONS AND RECOMMENDATIONS

The general conclusion that derives from the analysis of the technical feasibility and financial soundness of the smart borders legislative package is that this initiative is **likely to be far more difficult to implement than foreseen by the European Commission's impact assessment documents, with no clear added value or benefit that could be generally agreed upon by EU bodies, the co-legislators and the Member States.**

This conclusion is drawn both from looking at the way in which this impact assessment work has been built, and the assumptions informing the "preferred option" presented in the legislative proposals, and from empirical verification deriving from the examination of past likeminded initiatives in third countries, at the national level in the EU, and at the European level. The most compelling finding of this inquiry is certainly that **all likeminded measures have ran into severe technical and financial problems, and that the bodies and organisations in charge of these measures have all failed to deliver expected results, leading to sometimes crippling outcomes for the programmes in question.**

As far as smart borders are concerned, there **has been to date no full technical feasibility study per se done on the EES and RTP as envisaged in actual legislative proposals.** In addition, the **calculation of costs leaves aside the caveats introduced by the external contractors** tendered by the European Commission, and **fails to take into consideration lessons learnt from the past. It does not explain how such problems can be avoided** should the smart borders package be adopted.

In light of these findings, **it is not reasonable to consider that the measures envisaged in the smart borders package are technically feasible or financially sound.** For discussions on the package to continue, a proper study of the technical feasibility of EES and RTP as now envisaged by the proposals is required together with a fresh analysis of the costs and a detailed explanation of how problems that have recurrently arisen from the development of large-scale IT systems for border control purposes will be handled.

In light of these conclusions, we submit the following recommendations for consideration by the LIBE Committee and the European Parliament.

6.1. Recommendations on impact assessment work for large-scale IT systems in the area of freedom, security and Justice

The limitations found in the impact assessment documents accompanying the smart borders legislative package signal that the impact assessment procedures currently in place for large-scale IT systems are in need of a general overhaul. Proposals that do not include an empirical verification of the technical feasibility and financial soundness of envisaged measures are not conducive to evidence-based legislative work. **Starting with the smart borders package, the European Parliament should call upon the European Commission to systematically evaluate the lessons learnt from past initiatives in its impact assessment, and to clearly state how it plans to avoid problems that have manifested in the past.** In the case of the smart borders package, this issue should be included in the European Parliament's reports on the EES and RTP.

The European Parliament should **include empirical verification in the remit of its recently established Impact Assessment Unit,** and systematically call upon this unit to support the examination of proposed legislation.

The smart borders package clearly demonstrates **the need for a European Parliament Research Office to support empirical verification of impact assessment documents in particular**. The US Congressional Research Service could serve as an inspiration here, minus the barrier that prevents the general public from accessing the research conducted by this body. The measure need not be limited to issues pertaining to the area of freedom, security and justice, and **could assist in building a solid network of academic expertise around the work of the European Parliament**.

6.2. Recommendations on the smart borders legislative package

At this stage the purpose that the EES and RTP are supposed to serve is not clear. While they are presented as a measure supporting the EU's immigration and visa policy, a majority of Member States view it as a law enforcement and intelligence measure, which raises issues regarding the legal basis of the proposals. **The rapporteurs for the EES and RTP should consider recommending the suspension of further discussion on the file until the question of purpose has been clearly and explicitly addressed.**

In any case, the **question of purpose cannot be properly addressed until the European Commission has published the report on the functioning of SIS II and VIS**. The LIBE Committee should recommend that the European Parliament suspend discussions on the purpose of the EES and RTP until this report has been tabled and examined.

It is **not necessary to wait for the smart borders package to be adopted before calling upon EU-LISA to deliver a technical feasibility study on the EES and RTP**. Should the purpose of EES and RTP be clarified, the LIBE Committee should **call upon the agency to produce this study, including elements of comparison with other likeminded initiatives, before resuming discussion on the legal instruments.**

The **costing of the smart borders measures is no longer credible**, particularly in view of the significant overspending experienced by other initiatives in this area. The European Commission's costing, based on the Unisys 2010 cost analysis study, also uses median cost per crossing calculation, which is of little use given the scope of the EES and RTP. **In view of the current debates on cutting down the funding earmarked for the Internal Security Fund, the LIBE Committee should request that the costing analysis be redone.** A new costing analysis should be based on **local factors**, and include **considerations on costs incurred to Member States**. Particular consideration should be given to **Member States that are already operating EES and/or RTP schemes**, and to the **possible waste of public money incurred by the abandoning of these** in favour of the EES/RTP setup.

6.3. Recommendations on the Entry/Exit System

The 2008 feasibility study on which the European Commission's impact assessment is based uses **models that are no longer credible**. **The feasibility study should be redone**. The LIBE Committee should consider **requesting that the new feasibility study state explicitly the lessons that can be learnt from past initiatives**.

In any case, the new feasibility study on the EES should **wait until the effectiveness of VIS and the impact of VIS fingerprint checks on border traffic has been assessed**.

6.4. Recommendations on the Registered Traveller Programme

A full reassessment of the RTP is required. It should contrast the current preferred policy option with the possibility of establishing local RTP schemes, and the costs incurred to Member State consulates by the processing of RTP applications.

The case for introducing automated border control gates across the European Union should be reconsidered. In this regard, the conclusions from the two FP7 demonstration projects currently working on such schemes should be used to inform the discussion, given their costs and scope.

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ANNEXES

ANNEX 1

EU AND SCHENGEN MEMBER STATES REGISTERING ENTRIES AND EXITS ACROSS THE EXTERNAL BORDERS

EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
Austria	No	N/A	N/A	N/A	N/A
Belgium	No	N/A	N/A	N/A	N/A
Bulgaria	National EES registers entries and exits of: <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • EU citizens on case by case basis (risk analysis) 	<ul style="list-style-type: none"> • Immigration control • Fight against organised crime • Statistics 	Direct access: <ul style="list-style-type: none"> • All police services under authority of the Ministry of Interior • State Security Agency Access on request: <ul style="list-style-type: none"> • Judicial authorities • Prosecutor's Office • Investigation services of the Ministry of Finance (Customs) 	<ul style="list-style-type: none"> • Information on persons (biographic, travel documents) • Information on vehicles and means of transportation 	1 year for active storage Deletion after 5 years of archive storage
Cyprus	National EES registers entries and exits of: <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • Exceptions: passport holders of Australia, Canada, Monaco, New Zealand, San Marino and the Vatican 	<ul style="list-style-type: none"> • Immigration control (overstayers) • Provide evidence in court • Public order and security 	Direct access: <ul style="list-style-type: none"> • Immigration and Aliens Unit • Migration Department • Police • Ministry of Foreign Affairs Access on request: <ul style="list-style-type: none"> • Customs & Excise 	<ul style="list-style-type: none"> • Information on persons (biographic, occupation, address at destination, last authorised entry, information on deportation procedures) • Information on border crossing (location, date and time, route of arrival/departure, port of entry/exit, name and service number of 	Data has been retained since 1992 and never deleted

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EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
			Department	control officer on arrival and departure) <ul style="list-style-type: none"> Information on travel document and visa (type, issue number, country and date of issuance) 	
Czech Republic	No full EES. Record of entry and exit for TCNs holding a visa delivered by a Czech consular authority.	<ul style="list-style-type: none"> Administrative Judicial proceedings Statistics 	Direct access: <ul style="list-style-type: none"> Border guards Access on request: <ul style="list-style-type: none"> Law-enforcement authorities Ministry of Interior services 	<ul style="list-style-type: none"> Information on persons (name, date of birth, nationality) Information on travel document and visa (travel document type, travel document serial number, visa sticker number, country of issuance, co-travellers) 	Up to 20 years
Denmark	No	N/A	N/A	N/A	N/A
Estonia	National EES registers entries and exits: <ul style="list-style-type: none"> Visa holding TCNs Visa exempt TCNs 	<ul style="list-style-type: none"> Border control Immigration control (overstayers) 	Direct access: <ul style="list-style-type: none"> Security Police Board Citizenship and Migration Board Tax and Customs Board Ministry of Foreign Affairs and Consular Posts Police services Prosecutor's Office Access on request: <ul style="list-style-type: none"> Judicial authorities (Courts) 	<ul style="list-style-type: none"> Information on persons (name, date of birth, nationality, gender) Information on border crossing (location, date and time, direction of crossing, route of arrival/departure, port of entry/exit, name and service number of control officer on arrival and departure) Information on travel document and visa (travel document serial 	10 years Data is not automatically deleted

EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
				number, visa sticker number)	
Finland	<p>National EES registers entries and exits of:</p> <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • TCNs holding residence permits 	<ul style="list-style-type: none"> • Border control • Crime prevention • Criminal investigation • Intelligence 	<p>Direct access:</p> <ul style="list-style-type: none"> • Border Guard • Police • Customs <p>Access on request:</p> <ul style="list-style-type: none"> • Ministry of Foreign Affairs • Immigration Service 	<ul style="list-style-type: none"> • Information on persons (name, date of birth, nationality, gender) • Information on border crossing (location, date and time, direction of crossing) • Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) • Information on means of transportation (plate number, train, bus, flight, ferry number) 	<p>5 years</p> <p>No information on deletion</p>
France	No	N/A	N/A	N/A	N/A
Germany	No	N/A	N/A	N/A	N/A
Hungary	<p>National EES registers entries and exits of:</p> <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs 	<ul style="list-style-type: none"> • Immigration control (detection of overstayers and calculation of legal stay) 	<p>Direct access:</p> <ul style="list-style-type: none"> • Police <p>Access on request:</p> <ul style="list-style-type: none"> • Judicial authorities • Prosecutor's Office • 'Other investigative authorities' 	<ul style="list-style-type: none"> • Information on persons (name, date of birth, nationality, gender) • Information on border crossing (location, date and time, direction of crossing) • Information on travel document and visa (travel document serial number, visa sticker number) 	<p>6 months</p> <p>Data deleted automatically</p>

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EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
			<ul style="list-style-type: none"> Immigration police services Asylum authorities National security services 	number)	
Iceland	No	N/A	N/A	N/A	N/A
Italy	No	N/A	N/A	N/A	N/A
Latvia	National EES (REIS) registers entries and exits: <ul style="list-style-type: none"> Visa holding TCNs Visa exempt TCNs Statistical registration of all persons crossing the external border (including EU citizens) 	<ul style="list-style-type: none"> Immigration control (risk analysis, detection of overstayers) 	Direct access: <ul style="list-style-type: none"> Border guard Access on request: <ul style="list-style-type: none"> State Police Office of Citizenship and Migration Affairs State Revenue Service Inspection of Road Transport Bureau for the Prevention and Combating of Corruption Security Police Consular department and consular posts abroad 	<ul style="list-style-type: none"> Information on persons (name, date of birth, nationality, gender) Information on border crossing (location, date and time, direction of crossing, means of transportation including bus, flight or train number, ship name, vehicle license plate and VIN, insurance) Information on travel document and visa (travel document serial number, visa sticker number) 	10 years Data not deleted automatically
Lithuania	National EES (VSATIS) registers entries and exits of: <ul style="list-style-type: none"> Visa holding TCNs Visa exempt TCNs TCNs holding residence 	<ul style="list-style-type: none"> Border control (checks on persons, vehicles, objects) Immigration control System does not administer border 	Direct access: <ul style="list-style-type: none"> State Border Guard Service Police department Immigration department Customs Department 	<ul style="list-style-type: none"> Information on persons (name, date of birth, nationality, gender) Information on border crossing (location, date and time, direction of crossing) 	10 years Deletion procedure not specified

EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
	permits <ul style="list-style-type: none"> • TCNs holding other types of documents (e.g. facilitated railway transit documents) 	control events	<ul style="list-style-type: none"> • Special Investigation Service • State Tax Inspection Access on request: <ul style="list-style-type: none"> • Other authorities (non specified) can have access via State Border Guard Service 	<ul style="list-style-type: none"> • Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) 	
Luxembourg	No	N/A	N/A	N/A	N/A
Malta	EES but lack of information	N/A	N/A	N/A	N/A
The Netherlands	No	N/A	N/A	N/A	N/A
Norway	No	N/A	N/A	N/A	N/A
Poland	National EES records entries and exits of: <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • EU citizens 	<ul style="list-style-type: none"> • Border control • Immigration control (duration of stay, purpose of stay) 	Direct access: <ul style="list-style-type: none"> • Border guard • Police • Internal Security Agency Access on request: <ul style="list-style-type: none"> • Judicial authorities • Prosecutor's Office • Other authorities (not specified) 	<ul style="list-style-type: none"> • Information on persons (name, date of birth, nationality, gender) • Information on border crossing (location, date and time, direction of crossing) • Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) • Information on means of transportation (plate number, VIN number, make of the vehicle, type, country of 	15 years Data automatically erased

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EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
				registration, vehicle registration number, 'type' of passengers, i.e. driver, passenger)	
Portugal	<p>National EES registers entries and exits of:</p> <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • TCNs holding residence permits • Statistical registration for EU citizens 	<ul style="list-style-type: none"> • Statistics for EU citizens • Immigration control 	<p>Direct access:</p> <ul style="list-style-type: none"> • Immigration and border service <p>Access on request:</p> <ul style="list-style-type: none"> • Other law-enforcement authorities, non-specified 	<ul style="list-style-type: none"> • Information on persons (name, date of birth, nationality, gender) • Information on border crossing (location, date and time, direction of crossing) • Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) 	<p>10 years</p> <p>No information on deletion</p>
Romania	<p>National EES (REIS) registers entries and exits of:</p> <ul style="list-style-type: none"> • Visa holding TCNs • Visa exempt TCNs • Statistical registration for EU citizens 	<ul style="list-style-type: none"> • Immigration control • Fight against cross-border crime 	<p>Direct access:</p> <ul style="list-style-type: none"> • Services under the authority of the Minister of Interior • Romanian Intelligence Service • Ministry of Defence • National Anti-Corruption Directorate <p>Access on request:</p> <ul style="list-style-type: none"> • Ministry of Justice • Ministry of Foreign Affairs • Foreign Intelligence Service 	<ul style="list-style-type: none"> • Information on persons (name, date of birth, nationality, gender) • Information on border crossing (location, date and time, direction of crossing) • Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) • Information on means of transportation (plate number, VIN number, license plate, train, bus, 	<p>5 years</p> <p>Automatically deleted</p>

EU/Schengen Member State	Recording of entries and exits	Reported purpose	Reported access	Reported data held	Reported data retention period
			<ul style="list-style-type: none"> Financial Guard National Customs Authority Others, non-specified 	flight number)	
Slovakia	National EES (REIS) registers entries and exits of: <ul style="list-style-type: none"> Visa holding TCNs Visa exempt TCNs 	<ul style="list-style-type: none"> Border control Counter-terrorism Fight against organised crime Criminal Justice 	Direct access: <ul style="list-style-type: none"> Services under the Police Access on request: <ul style="list-style-type: none"> Office of the Public Prosecutor Judicial authorities Slovak Intelligence Service Military Intelligence Military Police Corps of Penitentiary and Justice Guards Railroad Police Customs Ministry of Justice Ministry of Foreign Affairs National Security Authority 	<ul style="list-style-type: none"> Information on persons (name, date of birth, nationality, gender) Information on border crossing (location, date and time, direction of crossing) Information on travel document, visa and/or residence permit (travel document serial number, visa sticker number) Information on means of transportation (plate number, train, bus, flight number) 	5 years Automatically deleted
Slovenia	No	N/A	N/A	N/A	N/A
Sweden	No	N/A	N/A	N/A	N/A
Switzerland	No	N/A	N/A	N/A	N/A
United Kingdom	Case detailed in the study	N/A	N/A	N/A	N/A

ANNEX 2.

CHRONOLOGY OF THE 2011 UKBA CRISIS, AS REPORTED BY THE INDEPENDENT CHIEF INSPECTOR OF THE UKBA

<p>1 July 2007: The UK Border Agency implements a policy to check 100% of passengers arriving in the UK against the Warnings Index.</p> <p>November 2009 – March 2010: Secure ID equipment is installed at 31 port locations.</p> <p>5 July 2010: The final Secure ID evaluation report is issued.</p> <p>27 January 2011: The former Head of Border Force sends a submission to the Immigration Minister proposing a move towards a risk-based approach to border security.</p> <p>31 January 2011: The Immigration Minister approves the 27 January submission.</p> <p>9 February 2011: The Acting Chief Executive of the UK Border Agency instructs the former Head of Border Force to check that Special Advisers have received the 27 January submission.</p> <p>14 February 2011: The Security Minister approves the 27 January submission.</p> <p>6 April 2011: The former Head of Border Force contacts Special Advisers, requesting that they examine the 27 January submission.</p> <p>8 April 2011: The former Head of Border Force submits proposals for a four year border strategy to the Home Secretary.</p> <p>13 April 2011: The Home Secretary and Immigration Minister state that they are not content to agree the changes suggested in the 8 April submission.</p> <p>19 May 2011: The former Head of Border Force meets with the Home Secretary to discuss the UK Border Agency's continued development of its border strategy.</p> <p>16 June 2011: A submission relating to planned industrial action is sent to the Home Secretary, Immigration Minister and Permanent Secretary.</p> <p>23 June 2011: The Home Secretary approves the 16 June submission.</p> <p>12 July 2011: The former Head of Border Force sends a further submission entitled "UKBA: Passenger clearance pressures" (also known as the Summer pressures submission) to the Home Secretary and Immigration Minister.</p> <p>22 July 2011: The Home Secretary approves the 12 July submission.</p> <p>28 July 2011: The UK Border Agency issues instructions to staff stating that a pilot of risk-based processes (also known as the Level 2 pilot) will operate between 29 July and 19 September 2011.</p> <p>12 September 2011: The former Head of Border requests an extension to the risk-based pilot, which the Home Secretary had approved on 22 July.</p> <p>13 September 2011: The Home Secretary agrees that the risk-based pilot can be extended until early November 2011.</p>	<p>29 September 2011: The Chief Inspector and his inspection team commence the onsite inspection phase at Heathrow Terminal 3.</p> <p>19 October 2011: Heathrow Terminal 3 onsite inspection phase concludes.</p> <p>2 November 2011: The Independent Chief Inspector informs the Chief Executive of the UK Border Agency of his concerns about the effectiveness of border security checks at Heathrow Terminal 3.</p> <p>3 November 2011: The UK Border Agency instructs its staff at ports to stop the risk-based measures immediately, full WI checks must take place for all arriving passengers and the biometric verification of all visa nationals arriving in the UK must be conducted at ports where systems to do so are in place.</p>
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Source: Independent Chief Inspector of the UK Border Agency (2012) *An investigation into border security checks*, op.cit., pp. 83-84.

NOTES

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