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Joint Master's
in
**Strategic
Border Management**

How can INTERPOL contribute to future border integrity?

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Abstract

This research is focused on exploring ‘How can INTERPOL contribute to future border integrity?’

The objective of this research is to identify how INTERPOL’s border elements can be operationalized within national and regional border programs so contributing to enhance global integrity.

The term ‘border integrity’ is relatively unrecognized in the language of border management or indeed within academic literature on the subject. It has however been used by INTERPOL to express its commitment to supporting border agencies worldwide, hence its relevance to this research.

Research on INTERPOL’s involvement in border management is scarce and consequently this research will add to the body of knowledge on firstly INTERPOL and then ultimately to academic knowledge on border management.

The research first offers an analysis of the theoretical frame of the ‘borderless’ world of the 90s, inspired by the globalization elements of the economic integration and free trade, and driven by the viewpoint of the neo-liberal.

Next it assesses the rapid reinforcement of border security within governmental agendas in the aftermath of the 9/11 terrorist attacks in the United States and the extended collaboration with the private sector, especially information technology, transportation, and private security companies, in line with the development of the doctrine known as ‘NPM’ (new public management) which asserts the supposed superiority of private managerial techniques that would lead to improvement in the efficiency and effectiveness of government services. In contrast, the research also analyzes the viewpoints critical to the NPM doctrine such as the ‘whole-of-government’ movement which advocates for holistic private-public collaboration methods to improve government processes.

Thirdly, it offers insight into the processes and the technologies that are driving the global evolution of border management, including the ‘seamless journey’ concept that harnesses biometric systems shared by smart cities¹ that properly recalibrated can be utilized in border settings.

The methodological approach of the research was an exploratory case study focused on INTERPOL, the International Criminal Police Organization, its stance in the border setting, the dynamic relationship with border stakeholders, and how it can contribute to improve national border integrity globally through the integration of its border capabilities.

Semi-structured interviews conducted with eight senior managers engaged in global border management activities representing international organizations, the public sector, and private industries from transportation and information technology sectors helped the author to elaborate findings that led towards the conclusions and recommendations.

The conclusions and recommendations offer suggestions for INTERPOL on how to better contribute to future border integrity globally.

¹ APEC, ‘Biometrics Systems and Applications for Smart Cities’, *APEC Smart City Industrial Technology Cooperation Forum*, 2012, http://mddb.apec.org/documents/2012/istwg/for/12_istwg_for_007.pdf, (accessed 21 April 2019).

List of Acronyms

ABC	Automated Border Control
ACI	Airport Council International
APEC	Asia-Pacific Economic Cooperation
API	Advanced Passenger Information
B2B	Business to Business
BCP	Border Control Point
CBM	Collaborative Border Management
CNIL	Commission Nationale de l'Informatique et des Libertés
DTC	Digital Traveller Credential
ECRIS-TCN	European Criminal Records Information System for third-country nationals
EES	Entry Exit System
eMRTD	Electronic Machine Readable Travel Document
ESP	European Search Portal
ETIAS	European Travel Information and Authorization System
EURODAC	European Asylum Dactyloscopy
FIND	Fixed INTERPOL Network Database
Frontex	European Border and Coast Guard Agency
FTF	Foreign Terrorist Fighters
G7	Group of Seven
GCTF	Global Counter-Terrorism Forum
GDP	Gross Domestic Product

GDPR	General Data Protection Rules
iARMS	Illicit Arms Records and Tracing Management System
IATA	International Air Transport Association
IBM	Integrated Border Management
ICT	Information and Communications Technology
I-24/7	INTERPOL Global Communication System
INTERPOL	International Criminal Police Organization
ICAO	International Civil Aviation Organization
ISO	International Organization for Standardization
MRZ	Machine Readable Zone
NBTC	National Border Targeting Centre
NPM	New public management
OECD	Organisation for Economic Co-operation and Development
PIU	Passenger Information Unit
PNR	Passenger Name Records
RPD	Rules on the Processing of Data
RTP	Registered Travel Program
SARP	Standard and Recommended Practices
SMV	Stolen Motor Vehicle
SIS	Schengen Information System
SLTD	Stolen and Lost Travel Document
TDAWN	Travel Document Associated With Notice
UN	United Nations
UNSCR	United Nations Security Council Resolution
VIS	Visa Information System
VWP	Visa Waiver Program
WEF	World Economic Forum

1. Introduction

In the last two decades the concept of border cooperation has completely re-shaped, quickly evolving from an internal dimension individually handled by national agencies to an external dimension collectively handled that resulted in the concept known as integrated border management.

In the same period there was a dramatic increase in the use of the International Criminal Police Organization - INTERPOL's elements in the worldwide borders and their combined use has been a valuable means for increasing worldwide law enforcement cooperation. Nowadays, member states worldwide are required to maximize their border integrity efforts due to the geo-political situation in which we are experiencing dramatic growth in the number of people crossing borders seeking a better life combined with increased travel flow.

However, the border infrastructure of Member States often is inadequate for managing the abovementioned challenges and, additionally, manpower shortfalls within border control agencies are generating serious security issues such as the increased threats posed by terrorist groups and organized crime. The situation requires the international border community to react, with clear goals to address future border integrity challenges.

The research aims at exploring INTERPOL's contribution to border integrity in the future through a case study that refers to the enhancement of the use of innovative solutions for border management (i.e., biometric, pre-screening, risk-profile, etc.) and the role assigned to INTERPOL in recommendations, directives, and outcomes from other international and regional organizations and specialized working groups. The research strategy was qualitative, involving desk research and semi-structured interviews with experts from major international stakeholders such as the International Civil Aviation Organization (ICAO), the European Border and Coast Guard Agency (Frontex), and the

International Air Transport Association (IATA), as well as national border agencies and global information technology firms which are leaders in technologies for border management.

1.1. Questions

The main research question is: How can INTERPOL contribute to future border integrity?

In order to explore this concept, the following supplementary research sub-questions were used to underpin the research strategy:

1. What are the current INTERPOL capabilities that contribute to border integrity?
2. What are the innovative border management concepts (including technology) that can support border agencies to improve future border integrity?
 - 2.1 What new INTERPOL capabilities have to be developed to maximise the organization's contribution to future border integrity?

1.2. Research Justification and relevance of the research

INTERPOL developed a set of seven Global Policing Goals, which align with the United Nations 2030 Agenda for Sustainable Development and the Sustainable Development Goals, to shape how the global law enforcement community works together to create a safer world.

The second of these goals is to ‘Promote border integrity worldwide’². This commitment is supported by four objectives: 1. Identify criminal and victim movements and travel; 2. Share information with and between border officials; 3. Contribute to the establishment of global standards for border security; 4. Assist member countries with maintaining the integrity of their security documents (e.g. addressing the use of counterfeit/false passports).

The focus of the research is on exploring INTERPOL’s strategy for future border integrity and how this can be operationalized through technology developments. This is the justification for this research and the relevance of the research is that there is a lack of empirical knowledge concerning

² Global Policing Goals, 2019, <https://www.interpol.int/en/Who-we-are/Strategy/Global-Policing-Goals>, (accessed 17 April 2019).

INTERPOL's capacity and capability within the academic literature and the general body of knowledge concerning border management.

INTERPOL enables police in its 194 member countries to work together to fight transnational crime. Although the organization's main crime programs encompass counter-terrorism, cybercrime, and organized and emerging crime, cross-cutting INTERPOL elements are interconnected with national or regional border programs, complementing each other and providing the international community with additional layers of border security.

However, there are even greater challenges on the horizon: the massive movement of people crossing international borders is estimated to grow to 1.8 billion by 2030³ - that is almost 50% more than now - with air travel alone expected to double to 8.2 billion in 2037⁴.

This mass movement of people can be leveraged by criminals to increase their transnational illegal activities resulting in terrorism and organized crime becoming significant global and political issues which require sustainable and innovation solutions.

This requires INTERPOL to adopt a truly global strategy that facilitates border integrity by the construction of systems that balance security and travel requirements seamlessly.

1.3. Organisation of the Dissertation

Chapter 1 introduces the topic of the research, outlines the research question, and articulates the justification and relevance of the research.

Chapter 2 outlines the result of an intensive literature review of the available material concerning border management, public administration, new public management, publically available INTERPOL documents, and finally literature about the World Economic Forum (WEF), which is developing a seamless travel experience.

³ International tourists to hit 1.8 billion by 2030, 2018, <https://www.e-unwto.org/doi/pdf/10.18111/9789284419876>, (accessed 22 October 2018).

⁴ IATA Forecast Predicts 8.2 billion Air Travelers in 2037, 2018, <https://www.iata.org/pressroom/pr/Pages/2018-10-24-02.aspx>, (accessed 27 October 2018).

Chapter 3 outlines the research design and methodology adopted for the research articulating the selection of a qualitative method as the most appropriate choice and the selection of a single case study.

Chapter 4 outlines the analysis approach to the data collected from the literature review, the secondary research material, and from the semi-structured interviews. The author also analyses the research data through the lens of a series of propositions that emerged from both literature and the interviews.

Chapter 5 outlines the conclusions and recommendations that emerged from the data analysed.

1.4. Conclusion

This introductory chapter has summarized the research question and related sub-questions designed to explore through a single case study approach how INTERPOL can contribute to future border integrity. It has the objective of adding to the body of academic knowledge relating to INTERPOL's contribution to border integrity.

2. Literature Review

2.1 Introduction

The theoretical analysis of the literature reviewed has examined three main periods: first, the pre-9/11 ‘borderless’ world; second, the post-9/11 virtualization of the border that has been operationalized with the SMART initiatives; third, the possible future management of passenger flow growth through the seamless travel process.

The author has also reviewed theories linked with the public administration management which could also explain the evolution of border management, such as the ‘new public management’ (NPM) and the ‘whole-of-government’.

This chapter is structured as follows: section one looks into the concept of ‘border integrity’ that has been launched by INTERPOL to describe one of its seven policing goals of the organization. The literature on ‘whole-of-government’ is considered in an attempt to interpret INTERPOL’s use of the phrase ‘border integrity’. Section two reviews a sizeable body of literature on the changing nature of borders worldwide and the emergence of the phenomenon of the reinforcement of borders post-9/11. The literature on ‘new public management’ is also briefly reviewed to position the research within a theoretical framework. Section three explores the emergence of border integrity as a strategic objective for INTERPOL adding to its traditional mandate of combatting serious international crime and terrorism. This section outlines what the literature has to say on the demand from international law enforcement agencies for access to and on-going development of INTERPOL’s strategic communication, analysis, and identification systems. Section four explores the writings of many modern researchers on what the border environment currently looks like. Section five draws the chapter to a conclusion with the suggestion from the literature that future border integrity will require

considerable technological investment in innovation, processes, and implementation to manage the exponential growth in travel and merchandise movement in a secure environment. This appears to sit well with INTERPOL's strategic ambitions as articulated in its global policing goals.

2.2 Setting the Scene

Following two decades of strong collaboration and partnership with border agencies and other public and private 'borderwork' worldwide including other international organizations, at the 2017 INTERPOL General Assembly in Beijing, China, the member countries of the organization supported the seven global policing goals on key security topics which include 'promoting border integrity'. Definitions of 'border integrity' are difficult to find in the literature reviewed as the phrase is not regularly used in the border management literature. INTERPOL also does not provide clarification regarding its interpretation of 'border integrity' except for the four objectives linked to the goal already listed in section 1.2.

However, the terms integrity is often used by the organization in other crime areas such as corruption, fraud and illegal betting. For example, 'integrity in sport' is mentioned in academic, governmental and practitioner literature where it is mostly linked to fighting corruption in sport as per Gardiner et al.⁵ (2016) and combating the growth of gambling as per McLaren⁶ (2011).

For the sake of this research, the author will consider the semantic of the term integrity which is, according to the Oxford Dictionary⁷, '*the state of being whole and not divided*'. Therefore, interpreting border integrity as a concept overarching all the border elements ('the whole') in an integrated and coordinated way ('not divided') is considered appropriate as further explained in this research.

Accordingly, when trying to position INTERPOL in this context the author focused not only on mere border security but also encompassed security management of border technologies, biometric, analysis and virtualizations, all of which are integral elements of a 'whole' approach to border integrity.

⁵ S. Gardiner, J. Parry, and S. Robinson, 'Integrity and the corruption debate in sport: where is the integrity?' *European Sport Management Quarterly*, vol. 17, no. 1, 2017.

⁶ R.H. McLaren, 'Is Sport Losing its Integrity?' *Marquette Sports Law Review*, vol. 21, no. 2, 2011.

⁷ Oxford Learner's Dictionaries, 2019, <https://www.oxfordlearnersdictionaries.com/definition/english/integrity?q=integrity>, (accessed 06 February 2019).

The concept of a whole approach to managing the borders of the future sits well with contemporary theorising on ‘whole-of-government’ approach, also known as ‘joined-up-government’, that sought to apply a holistic approach in public sector reform that according to Pollitt⁸ (2003) and Ling⁹ (2002) wanted to create a new way of working including several elements ranging from best practices, to new processes, to new ways of delivering services aiming at responding to the issue of fragmentation introduced by the ‘new public management’ (NPM) through an increased coordination. The author refers to the section 2.4 for a further explanation of the NPM concept.

The ‘whole-of-government’ approach also argues for the transformation of the business of government through the effective implementation and adaption of ICT. According to the Organisation for Economic Co-operation and Development¹⁰ (OECD), it ‘*transcends sectoral interests in favour of more fluid and seamless relations within government*’. This vision appears to fit neatly with the supra national requirement of facilitating seamless international travel for goods and people with the necessary requirement for security, authentication and identity verification necessitated by later day security concerns in an anticipated borderless world of the future.

2.3 A borderless world

It is not easy to identify when INTERPOL’s involvement in border-related matters first began: it might have been in the early twenty-first century, a period characterized by a rapid reinforcement of border security. Johnson and Jones¹¹ (2011) highlighted the quick change in the consideration of the border that followed ‘*naïve post-Cold War borderless world discourses*’ that initiated in the 1980s and gained currency following the collapse of communism in the late 1990s.

⁸ C. Pollit, ‘Joined-up Government: a Survey’, *Political Studies Review*, vol. 1, 2003.

⁹ T. Ling, ‘Delivering joined up government in the UK: dimensions, issues and problems’, *Public Administration*, vol. 80, 2002.

¹⁰ Public Governance Committee, ‘E-government for better government’, OECD, 2005, p. 24, [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/EGOV\(2005\)1&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/EGOV(2005)1&docLanguage=En), (accessed 13 April 2019).

¹¹ C. Johnson and R. Jones, ‘Rethinking the border in border studies’, *Political Geography*, vol. 30, no. 2, 2011, p. 61.

This proposition is further endorsed by Scott¹² (2012) and Paasi¹³ (2011) who consider the ‘borderless world simultaneously proposed by the neo-liberal rhetoric such as Ohmae¹⁴ (1999) and Greig¹⁵ (2002)’. Also Kawakubo¹⁶ (2017), emphasized the positive effects of the neo-liberal doctrine’s viewpoints inspired by globalization elements ‘such as the economic integration, free trade, and information’.

However, others like Yeung¹⁷ (1998) contests the borderless discourses as the ‘protagonists of the “borderless” world have used the metaphor as if it were reality: they have forgotten that the “borderless” world metaphor remains representational rather than real’. O’ Dowd¹⁸ (2010), also recognizes that

state borders continue to be deeply constitutive of the way in which contemporary social scientists think about social change, mobility and immobility, inclusion and exclusion, domestic and foreign, national and international, internal and external, us and them.

Also, according to Muller¹⁹ (2005), ‘the state and indeed international frontiers have proven to be far more resilient than such commentaries predicted’.

In the years of the perceived ‘borderless world’, border control was physically concentrated at the Border Crossing Point (BCP), with no pre-screening if a visa was not required. Furthermore, all the travellers were basically considered identical, bringing the same level of risks and requiring the same screening process. Ronchi²⁰ (2018) describes the border crossing point in the ‘borderless world’ as

¹² J. W. Scott, ‘European Politics of Borders, Border Symbolism and Cross - Border Cooperation’, in T. M. Wilson and H. Donnan, *A Companion to Border Studies*, John Wiley & Sons, 2012, p. 82.

¹³ A. Paasi, ‘Borders, theory and the challenge of relational thinking’, *Political Geography*, vol. 30, no. 2, 2011, p. 62.

¹⁴ K. Ohmae, *These Borderless World: Power and Strategy in the Interlinked Economy*, Harper Business, 1999.

¹⁵ J. M. Greig, ‘The End of Geography?: Globalization, Communications, and Culture in the International System’, *The Journal of Conflict Resolution*, vol. 46, no. 2, 2002, pp. 225-243.

¹⁶ F. Kawakubo, ‘The Transformation of Border Security practices from Fixed Borders to New Modalities and Privatization: from the Perspective of Critical Border Studies’, *Eurasia Border Review*, vol. 8, no. 1, 2017, p. 4, http://src-h.slav.hokudai.ac.jp/publicitn/eurasia_border_review/Vol81/Fuminori%20Kawakubo.pdf, (accessed 11 January 2019).

¹⁷ H. W. Yeung, ‘Capital, state and space: contesting the borderless world’, *Transaction of the Institute of British Geographers*, vol. 23, no. 3, 1998, p. 295, <https://courses.nus.edu.sg/course/geoywc/publication/TIBG.pdf>, (accessed 18 January 2019).

¹⁸ L. O’ Dowd, ‘From a borderless world to a world of borders: bringing history back in’, *Environment and Planning D: Society and Space*, vol. 28, 2010, p. 1034.

¹⁹ B. J. Muller, ‘Borders, bodies and biometrics: towards identity management’, in E. Zureik and M. B. Salter, *Global Surveillance and policing. Borders, security, identity*, Willan Publishing, 2005, p. 83.

²⁰ A. M. Ronchi, ‘Improving Border Check Point Security’, *International Journal on Cyberlaw, Cybercrime & Cybersecurity*, 2018, p. 3.

characterized by the paradigm of '*checking-everything-at-the-border*'. Orsini et al.²¹ (2017) provided a geographical perception of the borders by anchoring them '*on the ground as relatively fixed lines*'. The 'borderless world' discourses were definitely shaken by the 9/11 attack on the World Trade Center and the Pentagon. As underlined by Polner²² (2011), '9/11 was undoubtedly a paradigm shift with regard border security's perception that swiftly changed and the phrase '*the securitization of borders became discernible in the academic literature on border management and border control thereafter*'. According to Paasi²³ (2011), post 9/11, '*the reinforcement of the border became a key priority in governmental agendas*' overarching several independent yet coordinated elements such as policy, processes, practices, infrastructure and facilities.

In this context the role of innovation in border security emerged and became a priority and was endorsed at the governmental level. Already by 2002, the White House²⁴ in its 'action plan for creating a secure and smart border' recognized that '*the border of the future must integrate actions abroad to screen goods and people prior to their arrival*' in the United States. This was achievable through agreements with friendly '*neighbours, major trading partners, and private industry that allowed extensive pre-screening of low risk traffic, thereby allowing limited assets to focus attention on high-risk traffic*' as well as '*using advanced technology to track the movement of cargo and the entry and exit of individuals to the country*'.

The EU Commissioner for Migration, Home Affairs and Citizenship, Dimitris Avramopoulos addressed the role of information systems in enhancing external border management by saying²⁵:

*The use of new technologies can help manage the flow of travellers arriving at our external borders, while at the same time tackling irregular migration and enhancing our internal security*²⁶.

²¹ G. Orsini et al., 'Fixed Lines, Permanent Transitions. International Borders, Cross-Border Communities and the Transforming Experience of Otherness', *Journal of Borderlands Studies*, 2017, p. 1.

²² M. Polner, 'Coordinated border management: from theory to practice', *World Customs Journal*, vol. 5, no. 2, 2011, p. 50.

²³ Paasi, *Political Geography*, p. 62.

²⁴ Securing America's Borders Fact Sheet: Border Security, 2002, <https://georgewebush-whitehouse.archives.gov/news/releases/2002/01/20020125.html#>, (accessed 09 February 2019).

²⁵ D. Avramopoulos, Stronger and Smarter Borders in the EU: Commission proposes to establish an Entry-Exit System, Brussels, 6 April 2016, http://europa.eu/rapid/press-release_IP-16-1247_en.htm, (accesses 12 February 2019).

²⁶ COM (2016) 196 final, Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2016/399 as regards the use of the Entry/Exit System, 2016, https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/securing-eu-borders/legal-documents/docs/20160406/regulation_proposal_entryexit_system_en.pdf, (accessed 16 January 2019).

Amoore²⁷ (2011) also acknowledges how, in the wake of 9/11, the focus on *‘technical control and surveillance, leveraged by increasingly technical devices and biometrics, have gained in importance’*.

However, the link between 9/11 and the wider use of technology has been questioned by other authors.

According to Broeders and Hampshire²⁸ (2013), although *‘there can be little doubt that post-9/11 security concerns have been important drivers of the trend towards hi-tech border controls’*, the development of technology that underpins digital borders is *‘a continuation of longstanding practices of remote control that predates the post-9/11 obsession’*.

The proliferation of new technologies associated with border security in the post-9/11 era surely helped the inception of the ‘virtual border’ concept, which afterwards became operationalized by the SMART initiatives as outlined later in section 2.5. Again according to Amoore²⁹ (2011), the concept of virtual borders introduced a system that extends, both the space (*‘designed to operate far beyond state boundaries’*) and the time (*‘extending the temporal orientation of the boundaries’*) components of the boundaries, encompassing the entire pre-emptive processes of *‘assessing security risks against data, preventing potential threats prior to arrival, demarcating lines long before a recognizable border is reached’*. This view is also endorsed by Popescu³⁰ (2012) who argues that *‘borders are not fixed; they are not simply lines, but rather areas, networks, and even volume of variable depth’*.

The place of bordering has therefore been moved far away from the geographical border line itself both in space and time and now encompasses back office and cyberspace and operates in a ‘pre-emptive’ manner which Amoore³¹ (2011) describes as *‘spatial stretching’* and *‘temporal orientation’*.

This view enlarged the community involved with border management related matters, both internally and externally as well as among governmental agencies and private entities. Consequently, there has been a growing demand to better coordinate the work of different agencies at borders in order to facilitate effective border work.

²⁷ L. Amoore, ‘On the line: writing the geography of the virtual border’, *Political Geography*, vol. 30, Issue 2, 2011, p. 63.

²⁸ D. Broeders and J. Hampshire, ‘Dreaming of Seamless Borders: ICTs and pre-Emptive Governance of Mobility in Europe’, *Journal of Ethnic and Migration Studies*, vol. 39, no. 8, 2013, p. 1203.

²⁹ Amoore, *Political Geography*, p. 63.

³⁰ G. Popescu, *Bordering and Ordering the Twenty-first Century: Understanding Borders*, Lanham: Rowman & Littlefield Publishers, 2012, p. 7.

³¹ Amoore, 63.

Kawakubo³² (2017) acknowledges the borders transformation in the global war on terror through ‘*a reconfiguration of sovereign power via technology, arguing that transformation is characterized by the emerging role for privatization in border security*’. Traditional border models characterized as ‘state border’ are increasingly becoming outdated and are invalidated by the growing representation of the ‘non-state’ in border functions, ‘*such as private security companies, ICTs, banks and airlines—among others—that have been increasingly making decisions about the transnational flow of people and goods*’.

This theoretical approach was also endorsed by Broeders and Hampshire³³ (2013) who recalled how border security

functions were being shifted “up” to European and international organisations and agencies, “down” to local government and service providers and “out” to a range of non-state actors, including passenger carriers and transport companies.

This echoes the concept of ‘New public management’ (NPM) and offers evidence of its existence within the context of borderwork as is going to be illustrated in the next section.

2.4 A Theoretical Framework for a Borderless World

In this section the author examines the key changes that have occurred as more and more public services are contracted out to private organisations, and as the public sector itself grapples with internal markets. The literature suggests that the shift from full public control over borders to shared control in collaboration with private entities is not unique to the domain of border integrity. This is a holistic concept embracing many public management sectors that according to Hood³⁴ (2002) is identifiable in ‘*the doctrinal content of the group of ideas known as “new public management” (NPM)*’.

According to Osborne³⁵ (2006) the NPM growth from the late 1970s onward follows the

asserted superiority of private-sector managerial techniques over those of the classic public administration and with the assumption that the application of such techniques to public services would automatically lead to improvements in the efficiency and effectiveness of these services.

³² Kawakubo, *Eurasia Border Review*, p. 4.

³³ Broeders and Hampshire, *Journal of Ethnic and Migration Studies*, p. 1205.

³⁴ Hood, *Public Management: Critical Perspectives*, p. 3.

³⁵ S. P. Osborne, ‘The New Public Governance?’ *Public management Review*, vol. 8, no. 3, 2006, p. 379.

This concept initially began to be manifested in an attempt to *'slow down or reverse government growth in terms of overt public spending and staffing'* levels. According to Dunsire et al.³⁶ (1989) the problem of reducing public expenditure for government is *'how to rein in cost in relation to the political objectives and the solution often suggested is that there are too many costly civil servants'*. In a further NPM characteristic *'the shift towards privatization and quasi-privatization and away from core government institutions'* is identifiable. According to Lane³⁷ (2000) NPM is a topical phrase to describe how management techniques from the private sector are now being applied to public services. The author *'examines the key changes that have occurred as more and more public services are contracted out to private organisations, and as the public sector itself grapples with internal markets'*. Additionally, the *'development of automation, particularly in information technology, in the production and distribution of public services'*. This is also endorsed by Dunleavy et al.³⁸ (2006), who focused on *'new public management'* by setting out the case that a range of connected and information technology-centred changes will be critical for the current and next wave of change towards the *'digital-era governance'* that *'offers perhaps a unique opportunity to create self-sustaining change, in a broad range of closely connected technological, organizational, cultural, and social effects'*. Finally, according to Hood³⁹ (2002), the development of a more international agenda *'increasingly focused on general issues of public management, policy design, decision styles and intergovernmental cooperation, on top of the older tradition of individual country specialisms in public administration'*. This vision turned out, according to Gulrajani and Moloney⁴⁰ (2012), in the global public administration concept *'important to the extent that we strive to ensure security, peace and livelihood in an increasingly inter-connected world'*.

³⁶ A. Dunsire, C. Hood and M. Huby, *Cutback management in public bureaucracies: popular theories and observed outcomes in Whitehall*, Cambridge University Press, 1989, p. 1.

³⁷ J. E. Lane, *New Public Management*, Routledge, 2000, p. 1.

³⁸ P. Dunleavy et al., *'New Public Management Is Dead - Long Live Digital-Era Governance'*, *Journal of Public Administration Research and Theory*, vol. 16, no. 3, 2006, p. 467.

³⁹ Hood, p. 3.

⁴⁰ N. Gulrajani and K. Moloney, *'Globalizing Public Administration: Today's Research and Tomorrow's Agenda'*, *Public Administration Review*, vol. 72, no. 1, 2012, p. 24.

The limitation of the NPM doctrine has been raised by Christensen and Lægreid⁴¹ (2007) who illustrated different factors that have reaffirmed the central role of the public sector. It includes, *‘reaction to the “pillarization” or “siloization” of the public sector’*, typical of NPM reforms which *‘tended to reinforce the vertical coordination in detriment to the horizontal coordination’*.

Furthermore, it includes

the principle of “single-purpose organizations”, with many specialized and non-overlapping roles and functions, may have produced too much fragmentation, self-centered authorities, and a lack of cooperation and coordination, hence hampering effectiveness and efficiency.

Finally, it includes the *‘structural devolution, which entailed transferring authority from the central political administrative level to regulatory agencies’* deprived the political and administrative leadership. Entwistle and Martin⁴² (2005), propose a new concept of collaboration in public service based on *‘trust as a means to establish partnership and reducing conflict in relational exchange, unlock the distinctive competencies of other sector; and delivers a transformational approach to service improvement’*.

In this changing context, the relevance of the role of the international organizations, including INTERPOL, has emerged and grown in importance and relevance. Barnett and Finnemore⁴³ (1999) have explained that the growing number of international organizations can be discerned using the different theories from four different viewpoints as follows: *‘The Liberals’ ‘tends to see the international organizations as promoters of peace and engines of progress’*. *‘The Neoliberals’* have focused on *‘the impressive way in which international organizations help States to overcome collective action problems and achieve durable cooperation’*. *‘The Realists’* understand the role of international organizations *‘as stabilizing forces in world politics’*; and *‘The Constructivists’* focus *‘on the more humane and other-regarding features of international organizations’*.

Briefly summarizing this paragraph, from a theoretical perspective an important paradigm shift in the post-‘borderless world’ has been discernible. Despite their geographical fixity, international borders are not physical barriers *per se* and the static nature of border fences and checks is counterbalanced by

⁴¹ T. Christensen and P. Lægreid, ‘The Whole-of-Government Approach to Public Sector Reform’, *Public Administration Review*, 2007, p. 1060.

⁴² T. Entwistle and S. Martin, ‘From Competition to Collaboration in Public Service Delivery: A New Agenda for Research’, *Public Administration*, vol. 83, no. 1, 2005, p. 237.

⁴³ M. N. Barnett and M. Finnemore, ‘The Politics, Power, and Pathologies of International Organizations’, *International Organization*, vol. 53, no. 4, 1999, 726.

flexible and transforming modes of managing border crossing through an extended consideration of space and time.

Building on this perspective the literature suggests that there are two main concepts relevant for the research overarching the modern border control emerging from this first part of the literature review: the first concept is that borders are pre-emptive, the second concept is the extended use of technology. The two concepts although independent appears strongly coordinated.

2.4.1 The Pre-Emptive Concept

The pre-emptive concept can be broken down twofold. First, the border world is no longer operating at the moment of the physical crossing of the traveller or goods but it starts at the moment a person buys a ticket or applies for a passport or visa. In this way a traveller or customer starts by referring to a series of activities able to eliminate most of the risks associated to persons and goods already before they begin the journey.

Secondly, the border world is not physically concentrated at the border line and is no longer under the full control of governmental institutions. It encompasses governmental back offices that are supporting decisions taken by border authorities (internal collaboration), enhanced collaboration among States (external collaboration) as well as private entities who are handling multiple services ranging from ICT (Information and Communication Technology) to private security companies, and to passenger transport companies (public/private collaboration).

2.4.2 The extended use of technology

The extended use of emerging technology underpins the pre-emptive border concept but is not limited to the global travel process as embracing the global communication and trade, supporting states and international agencies as they enhance their cooperation and collaboration in sharing data and harmonizing standards, offering a remarkable prospective to change and improve the global travel security environment and systems.

However, the existing technology is still too advanced if compared to the current border architecture and its use is not easy, as it may be disruptive of the current border operating models and environments and would need significant investment in both physical, financial and management

resources. This also entails the need for a policy and legislative framework that underpins its use while also protecting the fundamental rights of all traveller, legal and illegal including migrants. This would accord with concerns raised by European authors such as Bigo⁴⁴ (2002) who argues that it is unwise to view migration solely from a security perspective.

2.5 INTERPOL as enabler of Border Integrity

Within the literature reviewed for this research it is difficult to state exactly when and for what reason INTERPOL began to strategically focus its organizational attention on border integrity. Stalcup⁴⁵ (2013) researched INTERPOL's decisions on counter-terrorism taken both in the two decades before, and immediately following 9/11.

The result of this research alongside other related viewpoints from other scholars and the organization's profile makes clear how the need for positioning INTERPOL in the counterterrorism alliance as well as reinforcing the organization's mechanism to tackle crime and criminality, encouraged INTERPOL towards developing a range of policing capabilities that once operationalized became key elements in supporting member countries' border management efforts through technological and criminal intelligence development.

According to Stalcup⁴⁶ (2013) this was apparent as far back as 1984, when the INTERPOL General Assembly '*in order not to risk obsolescence, by failing to assist member states in their counterterrorism efforts*', adopted two important resolutions. On one hand it placed '*violent crime commonly referred to as terrorism*'⁴⁷ within the Organization's mandate by linking it to ordinary law crimes. On the other hand, in the framework of Article 3 of the INTERPOL Constitution⁴⁸, it '*resolved*

⁴⁴ D. Bigo, 'Security and Immigration: Toward a Critique of the Governmentality of Unease', *Alternatives: Global, Local, Political*, vol. 27, no. 1, 2002, pp. 63-92.

⁴⁵ M. Stalcup, 'INTERPOL and the Emergence of Global Policing', in William Garriott, *Policing and Contemporary Governance: The Anthropology of Police in Practice*, Palgrave MacMillan, 2013, pp. 231- 261.

⁴⁶ Stalcup, *Policing and Contemporary Governance: The Anthropology of Police in Practice*, p. 248.

⁴⁷ INTERPOL Resolution AGN-1984-RES-6 on Violent crime commonly referred to as terrorism, 1984, <https://www.interpol.int/content/download/6485/file/GA-1984-53-RES-6.pdf> (accessed 24 December 2018).

⁴⁸ Article 3 of the INTERPOL Constitution strictly forbids the Organization to undertake any intervention or activities of a political, military, religious or racial character, in order to ensure the widest cooperation between the police authorities of its member countries, <https://www.interpol.int/content/download/590/file/Constitution%20of%20the%20ICPO-INTERPOL-EN.pdf>, (accessed 23 February 2019).

*that while a criminal act would be assessed as predominantly political or not, on a case-by-case basis, a violent political act outside a conflict area did not count as political*⁴⁹.

These decisions changed the organizational vision and mission of INTERPOL, pursued since the 1950s and through to the 1970s, that defining terrorism as ‘political’ and placed terrorism outside INTERPOL’s mandate, as per article 3 of its Constitution. The different interpretation of the article 3 that no longer correlates terrorism as ‘political’ opened up a new counter-terrorism approach within the organization that has recently been better elaborated in its operating model by recognizing it as one of the main crime programmes.

Later in 1998, INTERPOL issued guidelines and a declaration that *‘divided terrorist acts into their criminal components, rather than evaluating the motive or the ends used as justification*⁵⁰. Through its counter-terrorism program INTERPOL assists member countries to prevent and disrupt terrorist activities through the identification of individuals, networks and affiliates⁵¹ and within the same program an important role is taken by the travel and mobility stream⁵² which focus on enhancing national and regional border security and reducing cross-border movement of terrorists and their affiliates, and identifying and disrupting networks that facilitate their travel.

At the first post-9/11 assembly, INTERPOL was primed to pass a resolution declaring the terrorist acts as a *‘crime against humanity’*, making the proposal that the issuance of Red Notices⁵³ for terrorists shall be of highest priority⁵⁴. INTERPOL Notices are international requests for cooperation or alerts allowing police in member countries to share critical crime-related information. Notices are published by INTERPOL’s General Secretariat at the request of the INTERPOL National Central Bureau

⁴⁹ INTERPOL Resolution AGN-1984-RES-7 on Application of Article 3 of the Constitution, 1984, <https://www.interpol.int/content/download/6482/file/GA-1984-53-RES-7.pdf>, (accessed 24 December 2018).

⁵⁰ INTERPOL Resolution , 1998, <https://www.interpol.int/content/download/6275/file/GA-1998-67-RES-06%20-%20New%20Guidelines%20for%20Co-operation%20in%20Combating%20International%20Terrorism.pdf>, (accessed 4 February 2019).

⁵¹ What is INTERPOL? <https://www.interpol.int/Who-we-are/What-is-INTERPOL>, (accessed 17 April 2019).

⁵² Global Counter-Terrorism Strategy, https://www.un.org/en/counterterrorism/hlc/assets/pdf/007-03_Summary_CT_Strategy_2017_01_EN%20LR.pdf, (accessed 17 April 2019).

⁵³ Red Notice, <https://www.interpol.int/How-we-work/Notices/Red-Notices>, (accessed 19 February 2019).

⁵⁴ INTERPOL Resolution AG-2001-RES-05 on Terrorist attack of 11 September 2001, 2001, <https://www.interpol.int/content/download/6183/file/GA-2001-70-RES-05%20-%20Terrorist%20attack%20of%2011%20September%202001.pdf>, (accessed 23 February 2019).

⁵⁵ Each of our member countries hosts an INTERPOL National Central Bureau (NCB) that connects their national law enforcement with other countries and with the General Secretariat, <https://www.interpol.int/Who-we-are/Member-countries/National-Central-Bureaus-NCBs>, (accessed 16 April 2019).

(NCBs), and authorized entities. In the case of Red Notices, the persons concerned are wanted by national jurisdictions for prosecution or to serve a sentence based on an arrest warrant or court decision. INTERPOL's role is to assist the national police forces in identifying and locating these persons with a view to their arrest and extradition or similar lawful action.

The decisions illustrated above have undoubtedly influenced INTERPOL's strategic perspective and involvement in border related matters, especially when the need to secure borders emerged suddenly as a means to combat terrorism, in the early 2000s. According to Barnett and Coleman⁵⁶ (2005), this new vision was influenced by the environmental pressure and constraints that potentially threatened INTERPOL's global relevance on account of the rise in terrorist incidents and the need for an international coordinated response.

In the same period, according to Salter⁵⁷ (2005), a reinforced link between police and border agencies emerged and was given impetus by the accelerating discourses among police and border agencies on this issue, that beforehand was under-theorized, not fully considered and understudied. At the same time, within INTERPOL, a technological transformation had been initiated with the development of a system designed to analyze quickly and efficiently the myriad of information and intelligence available to it on a worldwide basis.

In 2003, the INTERPOL global communication system, I-24/7, to enable the world's police to exchange information securely and efficiently, was initially launched in Canada, and by 2007 all INTERPOL member countries were using it⁵⁸. The system today provides law enforcement agencies throughout the world with access to a global communication and information system that now connects the National Central Bureaus of INTERPOL with authorized law enforcement agencies of all the 194 INTERPOL Member States.

Again, in 2002, as a follow up of the UN Security Council Resolution - UNSCR 1373 (2001) that followed the 9/11 attack, 'Threats to international peace and security caused by terrorist acts'⁵⁹, the

⁵⁶ M. Barnett and L. Coleman, 'Designing Police: Interpol and the Study of Change in International Organizations', *International Studies Quarterly*, vol. 49, no. 4, 2005, p. 597.

⁵⁷ M. B. Salter, 'At the threshold of security: a theory of international borders', in E. Zureik and M. B. Salter, *Global Surveillance and policing. Borders, security, identity*, Willan Publishing, 2005, p. 36.

⁵⁸ Key dates, <https://www.interpol.int/en/Who-we-are/Our-history/Key-dates>, (accessed 12 April 2019).

⁵⁹ Resolution 1373, <http://unscr.com/en/resolutions/1373>, (accessed 04 January 2019)

INTERPOL database of Stolen and Lost Travel Documents (SLTD) was launched. While the UNSCR 1373 called on States to ‘*Prevent the movement of terrorists or terrorist groups by effective border controls and controls on issuance of identity papers and travel documents, and through measures for preventing counterfeiting, forgery or fraudulent use of identity papers and travel documents*’, INTERPOL by developing SLTD, provided its partner agencies and member countries with the facilities to exchange such data on fraudulent travel documents globally and securely.

In 2005, the INTERPOL – United Nations Security Council Special Notice was created to notify member nations about individuals and entities subject to sanctions imposed by the United Nations Security Council⁶⁰. It combines the UN sanctions regime with INTERPOL’s well-established notice system into an effective law enforcement tool. It is issued for individuals and entities that are subject to sanctions imposed by the United Nations Security Council. Its principal function is to alert national law enforcement authorities that at least one of these forms of sanctions apply: assets freeze for freezing funds or other assets, travel ban preventing an individual from entering or transiting through territories, and arms embargo preventing the direct or indirect supply, sale or transfer of arms and related materials.

Again in 2005, with the launch of FIND⁶¹ (Fixed INTERPOL Network Database), a new means of vigilance at ports of entry and border crossings that can be integrated into an already existing national police and border applications system was created. The value added by FIND in the context of transnational borders resides in developing a Business-to-Business (B2B) solution based on ‘web-service’ technology that is designed to overcome barriers for information sharing such as incompatibility of information, infrastructures and systems, linguistic barriers, lack of security, data stored in different formats and data structures. According to Gates et al.⁶² (2006), the FIND system provides a means to ‘*facilitate the interoperation of incompatible computational resources and data*’ on a truly global scale.

⁶⁰ INTERPOL – UNSC Special Notice, <https://www.interpol.int/How-we-work/Notices/INTERPOL-United-Nations-Security-Council-Special-Notices>, (accessed 12 April 2019).

⁶¹ New technology called MIND/FIND is developed, allowing countries to give their frontline officers such as immigration officials real-time access to our databases on nominal data, stolen vehicles and travel documents, 2005, <https://www.interpol.int/Who-we-are/Our-history/Key-dates> (accessed 12 May 2019).

⁶² A. Q. Gates et al., ‘Towards Secure Cyberinfrastructure for Sharing Border Information’, Proceedings of the Lineae Terrarum: International Border Conference, 2006, p. 1.

According to Medjahed et al.⁶³ (2003), ‘the value brought by business-to-business solutions was in automating relationships among business partners’ so creating, according to Papazoglou⁶⁴ (2008), ‘a world of cooperating services’ that ‘increasingly help shape modern society as a whole, especially in vital areas such as dynamic business, health, education, and government services’, with the concept of ‘whole’ returning in our research.

The various INTERPOL technologies of information sharing, although initially conceived as a response to the criminal and terrorism acts, in a relatively short time, resulted in the process being made widely available in real-time to border officials and border agencies throughout the world. As a matter of example, when Qatar integrated the database into its border management systems so that first line border guards could check entering individuals’ travel document validity, their queries totalled 7.5 million in the first year⁶⁵.

This value of this was immediately recognised by the former INTERPOL Secretary General⁶⁶ (2008) who highlighted how INTERPOL’s technology permits screening on a real-time basis anywhere in the world as a truly global crime interdiction facility. This was further endorsed by Cameron-Waller⁶⁷ (2008), who recognized the INTERPOL’s role as global service provider for law enforcement agencies from across the whole world and its ability to collaborate bilaterally or multilaterally using its I-24/7 platform.

Enders and Sandler⁶⁸ (2011) also underlined how national law enforcement authorities would have the capacity to perform through INTERPOL, systematic and thorough searches of all passports, vehicles, or persons at any particular place, and especially at border crossings on land and other points of

⁶³ B. Medjahed et al., ‘Business-to-business interactions: issues and enabling technologies’, *The International Journal on Very Large Data Bases*, vol. 12, no. 1, 2003, p. 59.

⁶⁴ M.P. Papazoglou, *Web Services: Principles and Technology*, Pearson Education, 2008, p. 19.

⁶⁵ Stalcup, p. 240

⁶⁶ R. K. Noble, INTERPOL launches its Global Security Initiative for the 21st century, speech in the 77th General Assembly, 7 October 2008,

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwibzJHd8ZbiAhWHDGMBHQcZ_AysQFjAAegQIABAC&url=https%3A%2F%2Fwww.interpol.int%2Fen%2Fcontent%2Fdownload%2F5547%2Ffile%2F77%2520GA%2520Ronald%2520K.%2520Noble.pdf&usq=AOvVaw3iWeGle7uwHIXncexReWtf, (accessed 11 February 2019).

⁶⁷ S. Cameron-Waller, ‘INTERPOL: a global service provider’, in S. D. Brown, *Combating International Crime: the longer arm of the law*, Routledge-Cavendish, 2008, pp. 43-58.

⁶⁸ W. Enders and T. Sandler, ‘Who adopts MIND/FIND in INTERPOL’s Fight Against International Crime and terrorism?’ *Public Choice*, vol. 149, no. 3/4, 2011, pp. 263-280.

international entry/exit (seaports, and airports). The various INTERPOL systems rapidly became of interest to the international community, illustrated by the increase of requests to INTERPOL to take measures to contribute with national and international partners in reinforcing borders.

On 20 November 2015 the Council of the European Union approved the strengthening of EU external borders control through the upgrade of the Schengen Member States' border control systems via electronic connection to the relevant INTERPOL databases at all external border crossing points with the purpose of performing systematic security checks at the external borders of the EU.⁶⁹

On 06 April 2016 the communication from the Commission to the European Parliament and the Council⁷⁰ recognized the various INTERPOL databases among the main information systems for border management and law enforcement. It also endorsed the implementation of projects that enables interoperability and simultaneous searches in the Schengen Information System (SIS) and INTERPOL's databases via the implementation of INTERPOL's interoperable solution.

On 7 March 2017, the Council adopted a regulation amending the Schengen borders code to reinforce checks against relevant databases at the external borders, both at entry and exit, carrying out systematic checks against relevant databases include SLTD.⁷¹

On 12 December 2017, the EU regulation proposal on establishing a framework for interoperability between EU information systems and INTERPOL⁷². Recital 14 underlines the role of INTERPOL's Stolen and Lost Travel Document (SLTD) and Travel Document Associated With Notice (TDawn) in enabling authorized law enforcement entities in Member States, including immigration and border control officers, to establish the validity of a travel document. The ETIAS queries the SLTD database and TDawn in the context of assessing whether a person applying for a travel authorization is likely

⁶⁹ Council of the European Union (2015) 14382, Outcome of the Council meeting 3432nd. Justice and Home Affairs, on Counter-terrorism and response to radicalization leading to terrorism and violent extremism, 2015, <http://www.parliament.bg/pub/ECD/201620ST14382.EN15.PDF>, (accessed 12 February 2019).

⁷⁰ COM (2016) 205 final. Communication from the Commission to the European Parliament and the Council. Stronger and Smarter Information Systems for Borders and Security, <https://eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=CELEX:52016DC0205&from=EN>, (accessed 15 February 2019).

⁷¹ Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code), <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0399&from=EN>, (accessed 09 October 2017).

⁷² COM(2017) 793 final, Proposal for a regulation of the European Parliament and of the Council on establishing a framework for interoperability between EU information systems (borders and visa), https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-security/20171212_proposal_regulation_on_establishing_framework_for_interoperability_between_eu_information_systems_borders_and_visa_en.pdf, (accessed 15 October 2018).

for instance to migrate irregularly or could pose a threat to security. The centralised European Search Portal (ESP) should enable the query against the SLTD and TDAWN databases using an individual's identity data.

On 21 December 2017, UN Security Council Resolution 2396, which updates UN Security Council Resolution 2178 (2014), created new international obligations and other provisions to strengthen border security and information sharing, including the use of Passenger Name Record (PNR) data, Advanced Passenger Information (API), and biometrics to reduce the opportunity or indeed prevent terrorists from boarding airplanes. Both resolutions also explicitly urged UN Member countries to better and timely contribute to INTERPOL SLTD and to systematically query INTERPOL databases when screening passengers.

INTERPOL standards are also recognized by the International Civil Aviation Organization (ICAO)'s ANNEX 9⁷³ - International Standards and Recommended Practices Facilitation –, and DOC 9303 - Machine Readable Travel Document. These protocols recommend contracting States to promptly report accurate information about stolen, lost, and revoked travel documents, issued by their State, to INTERPOL for inclusion in the SLTD database and should, as far as practicable, query, at entry and departure border control points, the travel documents of individuals travelling internationally against SLTD.

Also the 2017 G7 Interior Ministers' joint communique⁷⁴, 'Fight against terrorism and violent extremism: turning commitments into action' underpinned the role of INTERPOL as a global platform for the exchange of criminal information, the sharing of lost and stolen travel document data, and the systematic screening of international travellers, including biometric information and data collected on the battlefield; and committed to encourage all states to enhance the use of its databases.

Moreover, INTERPOL's role in border security is not limited to data sharing and the interoperability global databases. Within its role of co-chairing the Working Group on Border Management Related to Counter-Terrorism, INTERPOL also plays a pivotal role in providing guidance to Member States on

⁷³ Annex 9, <https://www.icao.int/Security/FAL/Pages/Annex9.aspx>, (accessed 13 February 2019).

⁷⁴ Presidenza Italiana del G7 2017, <http://www.g7italy.it/it/documenti-ministeriali>, (accessed 24 February 2019).

the implementation of the legal, institutional and practical counter-terrorism-related border control measures required⁷⁵.

All of the examples above highlighted how INTERPOL's commitment to border integrity is desired and highly expected by the international community and this simultaneously requires INTERPOL to timely respond to many different challenges. According to Stalcup⁷⁶ (2013),

countries requests for access to INTERPOL's services by different law enforcement agencies resulted in big changes for INTERPOL to assimilate itself into heterogeneous contexts of action, including direct access by border control.

This was a paradigm shift for an organization like INTERPOL that has been throughout its history a branch of the investigative police under the jurisdiction of the ministry or department in charge of public security or justice within individual nation states. However, the INTERPOL mission is clear: 'preventing and fighting crime through enhanced cooperation and innovation on police and security matters'⁷⁷ worldwide. In this way its activities are thus overarching all the police and law enforcement agencies which include border agencies.

This is an important milestone for INTERPOL, because the same strategic document highlights that police should be able to play a stabilizing role in times of uncertainty and no single law enforcement agency, private entity, or country can expect to respond effectively if it stands alone. Essentially, according to INTERPOL⁷⁸, a collective effort to provide a global response is needed more than ever and confirms INTERPOL's commitment to complementing the activities (including border management activity) executed by other national (including national border authorities) and international partners in as wide and effective manner as possible.

In this fashion the literature reviewed conclusively suggests that INTERPOL's strategic objective of contributing to border integrity worldwide is robust, real, active and on-going. However the fight against organised crime and international terrorism is not static and today's responses are seldom likely to be sufficient for new and emergent threats, therefore the challenge for a transnational

⁷⁵ Border Management and Law Enforcement relating to Counter-Terrorism, <https://www.un.org/counterterrorism/ctitf/en/border-management-and-law-enforcement-relating-counter-terrorism>, (accessed 11 October 2018).

⁷⁶ Stalcup, p. 239.

⁷⁷ Strategy, <https://www.interpol.int/Who-we-are/Strategy>, (accessed on 07 February 2019)

⁷⁸ INTERPOL Resolution GA-2017-86-RES-06 on Taking a Stance on Global Security, <https://www.interpol.int/About-INTERPOL/Structure-and-governance/General-Assembly-Resolutions/Resolutions-2010-to-present/2017-AGN86>, (accessed on 09 February 2009).

organisation like INTERPOL requires innovation, adaptation, foresight and access to emerging technologies from lead industries. This led the author to explore the concept of SMART borders in the literature reviewed.

2.6 The emergence of virtual borders and their operationalization through the SMART border initiative

2.6.1 The evolution of SMART border

The post 9/11 approaches to border control embraced the concept of the ‘virtual border’ through which the advanced use of actionable information (i.e., sharing of advanced passenger information for extensive pre-screening, interoperable databases, risk analysis) and facilities (i.e., automated border control, extended use of biometric identifier, entry-exit data system) at borders, made it possible to identify potential threats in advance.

The literature consulted suggests that this concept was initially operationalized in the United States, especially at the border with Canada, and then was implemented and carried on by other nations as a reaction to further terrorist attacks such as the March 2004 Madrid and July 2005 London bombings. In Europe, the ‘smart borders package’⁷⁹, involves actions to improve existing information systems to enhance border management and internal security and developing new ones as well as addressing gaps.

Consequently this section will illustrate how most of the literature reviewed supports the concept of SMART border initiatives as principally actionable by leveraging technologies for pre-emptive measures and biometric checks for travellers and goods.

2.6.2 The component elements of SMART borders

The SMART initiative requires a significant physical infrastructural investment at the border.

Koslowski⁸⁰ (2006) highlights the use of technology for border control ‘*has become a hallmark of*

⁷⁹ COM (2016) 205 final.

⁸⁰ R. Koslowski, ‘Information Technology and Integrated Border Management’, in M. Caparini and O. Marenin, *Border and Security Governance. Managing Borders in a Globalised World*, LIT Verlag, 2006, p. 48.

border security agencies modernization' efforts in line with one of the pillars of the NPM concept namely the change towards the 'digital-era governance' already introduced in the section 2.4.

In this context INTERPOL efforts on innovation and new technology have been recognized by authors like Jacobs and Blitsa⁸¹ (2008) who recognized that '*INTERPOL has been active and creative in exploiting new technologies that allow extensive international data sharing on terrorism and a number of crime problems*'. Interesting also is the vision of Broeders and Hampshire⁸² (2013) who claim that border digitalization and biometric and extended use of ICT shall also be understood as a political and symbolic means '*for governments eager to persuade their electorates that they have immigration under control*'.

A first example regarding the extended use of technology associated with SMART programs entails the implementation of Automated Border Control (ABC), also known as e-gates. The European Border and Coast Guard Agency (Frontex) defines the ABC⁸³ as a '*systems which can verify the identity of travellers crossing the borders at BCPs, without the need for human intervention*'.

Similarly, Donida Labati et al.⁸⁴ (2015) recognize how ABC gates '*can verify the identity of the travellers crossing the borders by exploiting their biometric traits, without the need of a constant human intervention*'.

Again, according to Broeders and Hampshire⁸⁵ (2013) the element that paved the way for ABCs was '*the advent of e-Passports*'. According to Salter⁸⁶ (2004), the contemporary e-passport, also known as Machine readable Travel Document (MRTD), contains both '*biometric information for the identification of the bearer*', and '*global biographical format*', as standardized practice enshrined in

⁸¹ J. B. Jacobs and D. Blitsa, 'Sharing Criminal Records: The United States, the European Union and Interpol compared', *Loyola of Los Angeles International and Comparative Law Review*, vol. 30, 2008, p. 125, <https://digitalcommons.lmu.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1631&context=ilr>, (accessed 13 February 2019).

⁸² Broeders and Hampshire, p. 1202.

⁸³ Frontex, Best Practice Technical Guidelines for Automated Border Control (ABC) Systems, 2015, https://frontex.europa.eu/assets/Publications/Research/Best_Practice_Technical_Guidelines_ABC.pdf, (accessed 15 February 2019).

⁸⁴ R. Donida Labati et al., 'Advanced design of Automated Border Control gates: biometric system techniques and research trends', Proceedings of the IEEE International Symposium on Systems Engineering (ISSE), 2015, p. 1, http://piurilabs.di.unimi.it/Papers/isse_2015.pdf, (accessed 11 January 2019).

⁸⁵ Broeders and Hampshire, p. 1211.

⁸⁶ M. B. Salter, 'Passport, Mobility, and Security: How smart can the border be?' *International Studies Perspectives*, vol. 5, no. 1, 2004, p. 72.

the ICAO document 9303. The ABCs, as means for an automated entry-exit systems, is able to simultaneously capture, read, and assess biographical and biometric data from processed passport. The use of e-Gates results in increasing the border processing throughput as well as facilitates the clearance procedures.

Donida Labati et al.⁸⁷ (2016) have highlighted the three types of checks performed by e-Gates. At first instance the ‘*authentication*’ of the document to prevent document forgeries. Secondly, the system captures a live biometric sample of the person, it is usually a face image for ‘*one-to-one verification*’ against the image stored on the e-Passport’s chip or in national systems, but new generation passports may also contain fingerprint or iris samples which better preventing impostors to cross the border. Thirdly the ‘*identification*’ of the traveller’s eligibility to cross the border is also assessed by checking the biographical information from the Machine Readable Zone (MRZ) of the passport against relevant national databases and international watch-lists of persons and/or stolen and lost travel documents. In some countries, the traveller’s biometrics also are compared to all known biometrics in national databases (so called ‘1:N matching’).

According to Ferrara et al.⁸⁸ (2014),

the reliability of electronic machine readable travel document (eMRTD) can be seriously compromised when an attack to ABC systems is performed by using morphed face images included in an eMRTD and obtained by combining faces of different subjects’ and in an ABC system scenario this would allow a criminal to exploit the passport of an accomplice with no criminal records to overcome the security controls.

It is worth noting that in this case the document is perfectly regular;

the attack does not consist of altering the document content but in deceiving the officer at the moment of document issuing. The document released will thus pass all the integrity checks (optical and electronic) performed at the gates.

It clearly emerges from the literature research above that in the framework of SMART initiatives, the role of the passport, preferably the electronic passport, remains central in the implementation of ABC systems but it is also being complemented by an increased use and check of biometric information at

⁸⁷ R. Donida Labati et al., ‘Biometric Recognition in Automated Border Control: A Survey’, *ACM Computing Survey (CSUR)*, vol. 49, no. 2, 2016, p. A2.

⁸⁸ M. Ferrara, A. Franco and D. Maltoni, ‘The magic passport’, *Proceeding of the IEEE International Joint Conference on Biometrics*, 2014, p. 2,
https://www.researchgate.net/profile/Matteo_Ferrara/publication/283473746_The_magic_passport/links/566a9ad808ae430ab4f799cd/The-magic-passport.pdf, (accessed 21 April 2019).

borders. The centrality of electronic travel documents facilitates INTERPOL to position itself in such a context, and its value becomes evident when the biographical data from the Machine Readable Zone (MRZ) of the inspected travel document is systematically transmitted to INTERPOL for checking against Nominal and SLTD databases.

However, to better share information and experiences on border management practices, INTERPOL strengthened its cooperation with Frontex. The two organizations are currently expanding and harmonizing their respective fraudulent document identification initiatives⁸⁹ to improve travel document checks at border points and tackle travel document fraud⁹⁰. On the other hand, the increased use of biometric information opens new opportunities for INTERPOL since the organization ‘*is looking to the future of border security with a new focus on biometric tools including fingerprints and facial recognition*’⁹¹.

The MRTD are also exploited by other technological tools associated with the SMART initiatives such as the Advanced Passenger Information (API) and the Passenger Name Record (PNR) systems. Both solutions are key elements of the pre-emptive characteristic of the SMART border world. Together with MRTDs and biometrics, the benefits of API transmission and PNR access enable border control authorities to identify potentially high-risk individuals and process passengers in a pre-emptive and efficient manner.

According to Doyle (2010)⁹², the pre-emptive element in SMART border initiative, operationalized by system such as API and PNR, provide border agencies with the opportunity for goods and passengers to ‘*be assessed for admissibility and clearance in advance of arriving at the physical nation state border*’.

The legal framework for the API is the Chicago Convention⁹³ and its Annex 9 provides Member States with the mechanism to exercise the formalities that they deem necessary in order to accomplish border

⁸⁹ INTERPOL Annual Report 2017, <https://www.interpol.int/content/download/5258/file/Annual%20Report%202017-EN.pdf>, (accessed 12 March 2019).

⁹⁰ INTERPOL, INTERPOL and Frontex meet on enhanced border management, 2018, <https://www.interpol.int/fr/Actualites-et-evenements/Actualites/2018/INTERPOL-and-Frontex-meet-on-enhanced-border-management> (accessed 12 April 2019).

⁹¹ INTERPOL, Annual Report, 2017.

⁹² T. Doyle, ‘Collaborative Border Management’, *World Customs Journal*, vol. 4, no. 1, 2010, p. 16.

⁹³ Convention on International Civil Aviation (also known as Chicago Convention) set forth the purpose of the International Civil Aviation Organization, <https://www.icao.int/publications/pages/doc7300.aspx>, (accessed 16 April 2019).

control processes. API is typically obtained from an official travel document and usually considered to be ‘verified’ and it helps to identify a specific person – often a person about whom something may already know or indeed information about such as persons is on a watch list or who have registered for a known traveler program.

According to Papademetriou and Collett⁹⁴ (2011),

API system captures travellers’ biographical information contained in the machine-readable part of a passport during airline check-in and communicated by airline carriers to border officials in advance of passenger’s departure from the origin and/or arrival into the country. The information can then be checked against computer databases and watch lists and used for immigration processing, security, and customs purposes.

PNR is typically contained in an airline’s reservation system and is not considered as ‘verified’ because it is collected and stored at the time of and then subsequent to the original booking. PNR data can be used to identify a person, and typically it is used for risk-based assessments of persons about whom you may not have other information, and is typically more valuable in the identification of suspicious trends, relationships and travel patterns.

Again according to Papademetriou and Collett⁹⁵ (2011) the PNR

is the generic name given to the files created by airlines for each journey booked by a passenger. This is stored in the airlines’ reservation and departure control database. PNR allows all the different agents within the air industry to recognize each passenger and have access to all relevant information related to his/her journey, including departure and return flights, connecting flights, means of payment, and special services required on board the flight.

Although PNR information is closely linked with API information and is currently an information tool that may be accessed by border officials, it differs to API in that it is a business document belonging to air carriers. PNR is therefore not a governmental creation, but rather a business tool belonging to private entities, the air carriers, in which the possible usage of it may surely raise more sensitive issues than API. However, both systems support the pre-emptive element of the SMART initiative since these systems provide advance warning of persons of interest travelling to the country while quickly clearing low-risk passengers.

An issue to be always considered when implementing API and PNR system in countries is the provision of a legal framework that shall require the prevention or at the least reduction of privacy

⁹⁴ D.G. Papademetriou and E. Collett, *A new architecture for border management*, Migration Policy Institute, 2011, p. 4.

⁹⁵ Papademetriou and Collett, *A new architecture for border management*, p. 4.

right infringements for individuals. This issue is acknowledged by Koslowski⁹⁶ (2005) who clearly advised that examining the legislation that ‘*requires commercial airlines and ships to electronically submit PNR and API data*’ issues may arise ‘*by differing legal regimes governing privacy and personal data protection*’.

But API and PNR are not the only sources for pre-emptive information. Historically the concept of pre-emptive check has been taken into account by visa policies that have been for years the major instrument for regulating and controlling the global flow of people. In the last decades we have experienced how the use of technology also impacted the visa regime and the development of visa-free mobility.

The United States has developed different data-collection mechanisms at different stages of the travel experience. The ‘Electronic System for Travel Authorization’ (ESTA) checks individuals travelling within the ‘Visa Waiver Program’ regime against the national and international watch lists (i.e., no fly list, terrorist watch list, INTERPOL databases including travel ban from UN lists) before the journey initiates. Similarly, the ‘Electronic Travel Authorization’ (eTA) is an entry requirement for visa-exempt foreign nationals travelling to Canada by air operational since 2015. In 2021, in the framework of the implementation of the SMART package, the implementation of the ‘European Travel Information and Authorization System’ (ETIAS), will allow European Union countries to gather and verify information submitted by visa-exempt third-country nationals ahead of their travel to the Schengen area.

However, according to Mau et al.⁹⁷ (2015), ‘*not everybody has benefited from these developments*’.

Although with citizens from OECD countries and rich countries have gained mobility rights, the same rights have not been provided to citizens from other regions, in particular for citizens from African countries.

⁹⁶ R. Koslowski, ‘International Cooperation on Electronic Advanced Passenger Information Transfer and Passport Biometrics’, *Prepared for presentation at the International Studies Association Meeting*, Montreal, 2005, p. 29, https://www.albany.edu/~rk289758/documents/Koslowski_ISA_2004_passports.pdf, (accessed 14 February 2019).

⁹⁷ S. Mau et al., ‘The global mobility divide: How visa policies have evolved over time’, *Journal of Ethnic and Migration Studies*, vol. 41, no. 8, 2015, p. 1192.

Another key component of the SMART environment is the cooperation as per Koslowski⁹⁸ (2005), who highlights as *‘smart borders are not just a matter of deploying hardware and software; they require international cooperation’*. Smart borders are the foundation of bilateral cooperation with other countries that enables to push ‘borders out’ while at the same time *‘it attempts to minimize the impact of border controls on trade and travel’*. But the expanded use of technology and pre-emptive measures require not only a larger internal and with neighbour countries collaboration, but also an increased collaboration with the private industries and international organizations that can help in defining policy and technological global standards.

According to Kawakubo⁹⁹ (2017), *‘the subject of privatization is central as it contends that the fields and actors involved are not only interchangeable to the inside-outside model but also to the public-private partnerships which can reconfigure the modalities of the border security complex’* whose foundation, as for Kawakubo¹⁰⁰ (2017) remains the private sector. This is also another pillar of the NPM concept that can be identified in the literature as more and more public services are contracted out to private organisations. The literature reviewed to date suggest that this reconfiguration is essential to the development of future digital borders. The next section will outline the extended use of advanced technology and innovation as means to better handle the big increase of international travellers forecast in the coming years.

2.6.3 INTERPOL and SMART Border Initiative

In the previous sections the author has highlighted how the current border management has been operationalized within SMART border concept and we have also seen how the use of INTERPOL capabilities for border security purposes is discernible within SMART border initiatives both in the US and in Europe. For example, the ‘8 U.S. Code 1187 - Visa waiver program for certain visitors’, requires that one country may not be designated as a program country unless certain requirements are met. This arrangement requires that *‘the government of the country enters into an agreement with the*

⁹⁸ R. Koslowski, ‘Smart Borders, Virtual Borders or No Borders: Homeland Security Choices for the United States and Canada’, *Law and Business Review of the Americas*, vol. 11, 2005, p. 546.

⁹⁹ Kawakubo, p. 12.

¹⁰⁰ Kawakubo, p. 9.

*United States to report, or make available through INTERPOL, to the United States Government, information about the theft or loss of passports not later than 24 hours after becoming aware of the theft or loss and in a manner specified in the agreement*¹⁰¹.

On the other hand, in the Communication from the Commission to the European Parliament and the Council on ‘Stronger and Smarter Information Systems for Borders and Security’, the Commission commits itself to continue funding the implementation of projects that enable simultaneous searches in the Schengen Information System (SIS) and INTERPOL’s databases on Stolen and Lost Travel Documents (SLTD) and wanted criminals, stolen motor vehicle (SMV) or firearms (iARMS) that are complementary with EU information systems.

Furthermore, throughout the previous paragraph we have seen the key role played by e-passport which is the element that permit the identification of both biographic and biometric of the travellers. SMART initiative facilitates INTERPOL to take a stance in such a context, as it *‘provides a number of specialized tools for the law enforcement community to help detect fraudulent documents - technical databases, online reference tools, a forensic laboratory and tailored training programmes*¹⁰².

However, to better share information and experiences on border management practices, INTERPOL strengthened its cooperation with partners in different sectors to improve the level of security of official documents. As a matter of example, cooperation is on-going with Frontex on strengthening the ability of police and border officers to authenticate travel and identity documents¹⁰³.

On the other hand, the increased use of biometric information opens new opportunities for INTERPOL since the organization *‘is looking to the future of border security with a new focus on biometric tools including fingerprints and facial recognition*¹⁰⁴.

¹⁰¹ US Code Title 8—Aliens and Nationality, <https://www.govinfo.gov/content/pkg/USCODE-2015-title8/pdf/USCODE-2015-title8-chap12-subchapII-partII-sec1186b.pdf>, (accessed 23 February 2019).

¹⁰² Identity and travel document fraud, <https://www.interpol.int/Crimes/Counterfeit-currency-and-security-documents/Identity-and-travel-document-fraud>, (accessed 17 April 2019).

¹⁰³ Strengthening border security through enhanced frontline collaboration, <https://www.interpol.int/News-and-Events/News/2017/Strengthening-border-security-through-enhanced-frontline-collaboration>, (accessed 19 April 2019).

¹⁰⁴ INTERPOL Annual Report, 2018, <https://www.interpol.int/content/download/5258/file/Annual%20Report%202017-EN.pdf>, (accessed 12 March 2019).

Another INTERPOL role at stake is on its systems' capability to be fully integrated with national API and PNR system that member states are exploiting for the advanced screening of passengers against INTERPOL databases such as SLTD and Notice.

As a matter of example, according to the CNIL, the 'Commission Nationale de l'Informatique et des Libertés'¹⁰⁵ (2016), when the PNR system was implemented in France, it was connected early with the INTERPOL database of Stolen and Lost Travel Document (SLTD): '*Un criblage des individus et des objets, c'est-à-dire une comparaison automatique et systématique des données communiquées par les compagnies aérienne avec certains fichiers relatifs à des personnes ou des objets recherchés ou surveillés (FPR, FOVeS, système d'information Schengen II, SILCF, base ASF-SLTD d'INTERPOL)*'.

2.7 SMART border and seamless travel

In this section the author outlines what the literature has to say about the concept of seamless travel and what its impact is for the traveller. The author draws on both academic and practitioner literature in this regard.

2.7.1 International Travel Volumetric

The international travel flows continue to rise due to both the geo-political situation in which we are experiencing dramatic growth in the number of people crossing borders seeking a better life, combined with the increased personal travel. The massive movement of people legally crossing international borders is estimated to grow to 1.8 billion annually that is almost 50% more than now by 2030¹⁰⁶ (as indicated in the table 2), with air travel alone expected to double to 8.2 billion in 2037¹⁰⁷.

This illustrates the scale of the challenge continuing to emerge for border agencies, travel companies, transport organisations and indeed for global law enforcement organisations such as INTERPOL.

Figure 2.1 below sourced from the WEF indicates the exponential anticipated increase in travel in the years ahead.

¹⁰⁵ Le 'système API-PNR France', <https://www.cnil.fr/en/node/22908>, (accessed 20 March 2019).

¹⁰⁶ UNTWO Tourism Highlights 2018 Edition, 2018.

¹⁰⁷ IATA Forecast Predicts 8.2 billion Air Travelers in 2037, 2018.

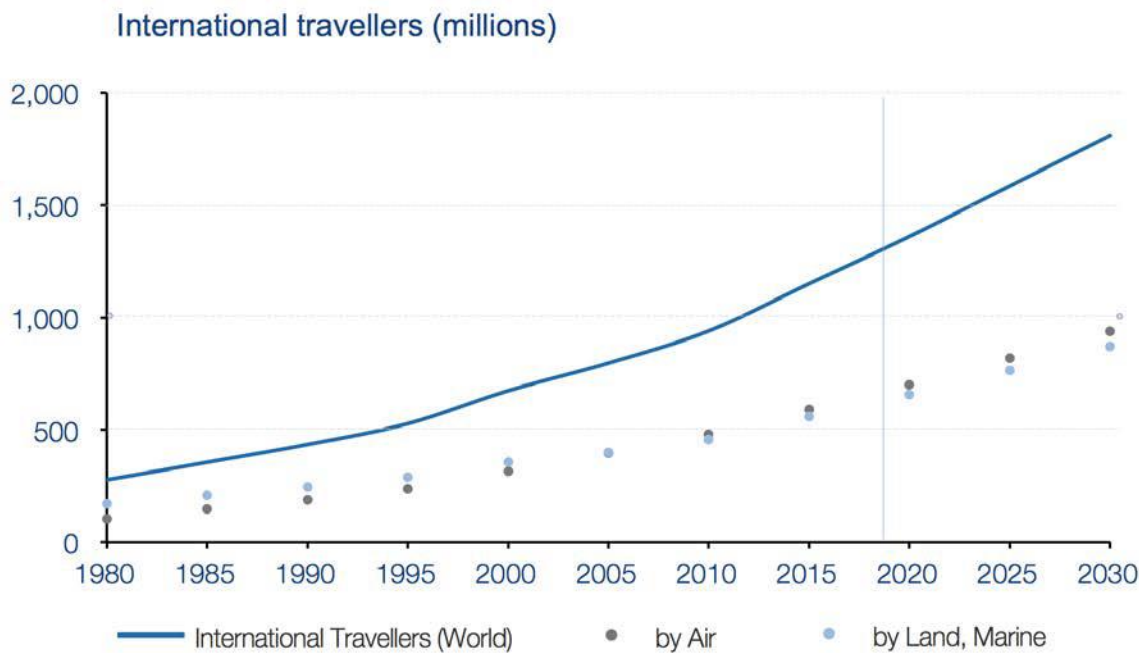


Figure 2.1¹⁰⁸: Growth in International Arrival

Cross-border travel is paramount to global economy and trade, the exploration of new cultures and the exchange of idea. This is explained with the term ‘social remittances’ that, according to Lacroix¹⁰⁹ (2016) was

coined over fifteen years ago to capture the notion that, in addition to money, migration also entails the circulation of ideas, practices, skills, identities, and social capital also circulate between sending and receiving communities.

On the other hand this mass movement of people can be leveraged by criminals to increase their transnational illegal activities contributing to terrorism and organized crime. Thus becoming significant global and political issues which require sustainable and innovative solutions

According to Papademetriou and Collett¹¹⁰ (2011), this increased traveller flow causes a growing pressure on border check points and the need to process large volumes of people and goods at the crossing points without creating bottlenecks but all the time maintaining the highest level of security.

¹⁰⁸ World Economic Forum, ‘Growth in International Arrivals’, *System Initiative on Shaping the Future of Mobility*, 2018, p. 8, <https://www.weforum.org/reports/the-known-traveller-unlocking-the-potential-of-digital-identity-for-secure-and-seamless-travel>, (accessed on 17 October 2018).

¹⁰⁹ T. Lacroix, P. Levitt, and I. Vari-Lavoisier, ‘Social remittances and the changing transnational political landscape’, *Comparative Migration Studies*, vol. 4, no. 16, 2016.

¹¹⁰ Papademetriou and Collett, p. 2.

Due to these greater challenges on the horizon, the way borders are managed today is probably not sustainable tomorrow. The World Economic Forum¹¹¹ has recently issued a white paper¹¹² (2018) warning that *‘at the current increasing pace, cross-border travel may exceed infrastructure capacity limits, leading to breakdown of processes, and industry and security deterioration’*.

According to Doyle¹¹³ (2010) to keep the balance between facilitation and security, there is a need to *‘completely redesign the complete chain where goods and passengers are processed’*. This requires both new operational methods which include a stronger cooperation and trustful agreements among the different stakeholders including with private partners as well as leveraging existing technology to embrace trusted travel programmes. A trusted traveller status, according to Jackson et al.¹¹⁴ (2011) is a process which involve a governmental agency who provides a status that *‘allows these passengers then to go through less intense screening than would have been the case without the program, and the remainder of the public receives more intense screening’*. Interesting is the viewpoint of Leese¹¹⁵ (2013) who highlighted that

contrary to the automatic collection of passenger information in PNR and API files, trusted traveler programs bring the disclosure of data back into the sphere of visibility and individual awareness on a voluntary basis.

WEF¹¹⁶ has proposed a seamless traveller program that focuses on the use of traveller-managed digital identities to *‘enable governments, in partnership with industry leaders and passengers, to conduct pre-vetting risk assessment and security procedures to enhance the seamless flow of travellers through borders’*. The environment within this proposal is further explored as unit of analysis in a case study in the next chapter with the research objective of exploring how INTERPOL can be engaged within the seamless traveller concept as per the WEF proposal. The seamless traveller concept will be tested in

¹¹¹ WEF, International Organization for Public-Private Cooperation, <https://www.weforum.org/>, (accessed 05 April 2019).

¹¹² WEF, ‘Digital Identity On the Threshold of a Digital Identity Revolution’, *White Paper*, p. 10, http://www3.weforum.org/docs/White_Paper_Digital_Identity_Threshold_Digital_Identity_Revolution_report_2018.pdf, (accessed 16 October 2018).

¹¹³ Doyle, *World Customs Journal*, p. 19.

¹¹⁴ B. A. Jackson, E. W. Chan and T. Latourrette, ‘Assessing the Security Benefits of a Trusted Traveler Program in the Presence of Attempted Attacker Exploitation and Compromise’, *Working Paper*, RAND Corporation, 2011, p. 3, https://www.rand.org/content/dam/rand/pubs/working_papers/2011/RAND_WR855.pdf, (accesses 12 March 2019).

¹¹⁵ M. Leese, ‘Blurring the dimensions of privacy? Law enforcement and trusted traveler programs’, *Computer Law & Security Review*, vol. 29, no. 5, 2013, p. 486.

¹¹⁶ WEF, ‘The Known Traveller Unlocking the potential of digital identity for secure and seamless travel’, *System Initiative on Shaping the Future of Mobility*, 2018, p. 5.

the semi-structured interviews with the identified experts in the areas of border management, international criminality management and travel management.

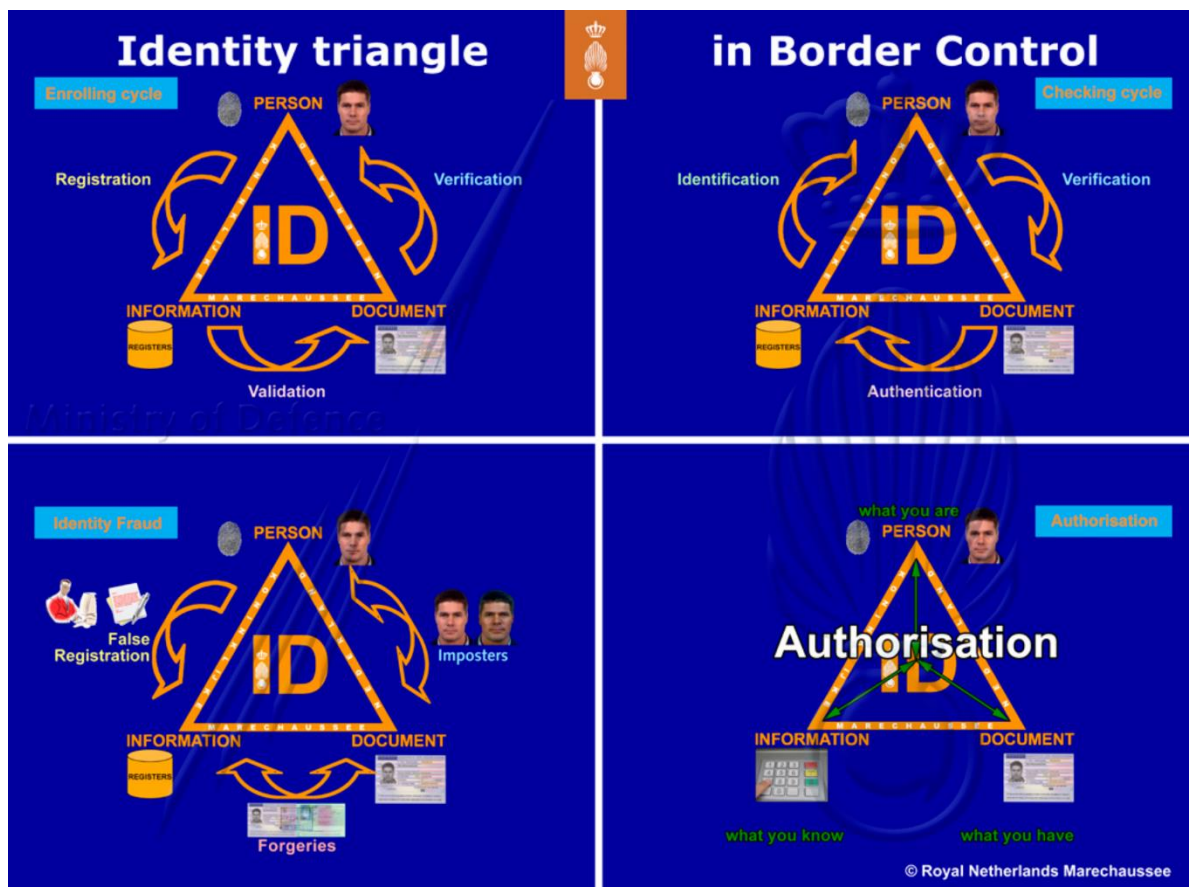
When moving from the SMART concept to the seamless one it should be taken into account that the main elements remain unvaried: conducting pre-vetting risk assessment through the use of advanced pre-emptive technology and exploiting the use of biometric information for the authentication of the travellers when crossing the border. The evident change when moving from the SMART concept to the seamless border is the use of a different identifier to authenticate the travellers: from a physical and intrusive '1 to 1' check of biographical and biometric information against the information stored in the passport chip (passport-centric), to a soft confirmation of the biometric information (human-centric) of the traveller with the one already provided to a governmental authority through a trusted traveller program.

However, Ignatenko and Willems¹¹⁷ (2010) argued that to accurately resolve an individual's identity, there must be more than one source of identity. This supports the argument that has been already introduced in the previous paragraph 2.6.2. as per Donida Labati et al.¹¹⁸ (2016) and the three types of checks performed by e-Gates, verification, authentication, and identification.

The identity triangle required in border control is also strongly acknowledged by the Royal Netherlands Marechaussee as per the figure 2.2 below.

¹¹⁷ T. Ignatenko and F. M. J. Willems, 'Biometric Security from an Information-Theoretical Perspective', *Foundations and Trends in Communications and Information Theory*, vol. 7, no. 2-3, 2010, p. 3.

¹¹⁸ R. Donida Labati et al., 'Biometric Recognition in Automated Border Control: A Survey', p. A2.

Figure 2.2¹¹⁹: Identity Triangle Process

However this particular position is rejected by Camp¹²⁰ (2004) who highlighted that a passport identifier (i.e., the number) and its attributes (i.e., nationality, biographical and biometric information) does not necessarily exist in all digital systems therefore posing serious vulnerabilities, ‘*that undoubtedly will be compromised by unscrupulous individuals for criminal profit*’.

Additionally, activate a digital identity world means confronting the challenge against the reality such as the huge number of people who do not have access to technology and even worst considering, according to Gelb and Diofasi Metz¹²¹ (2018) the estimated 650 million unregistered births of children between 0-16 years of age which un-documentation constitutes an incredible obstacle to build a global digital identity oriented world.

¹¹⁹ H. De Moel, ‘Identity Triangle Process’, 2015, *ICAO MRTD Report no. 1*, 2015, vol. 10, no.1, p. 26, https://www.icao.int/publications/journalsreports/2014/MRTD_Report_Vol10_No1.pdf, (accessed 12 May 2019).

¹²⁰ L. J. Camp, ‘Digital Identity’, *IEEE Technology and Society Magazine*, 2004, p. 36.

¹²¹ A. Gelb and A. Diofasi Metz, *Identification Revolution: Can Digital ID be Harnessed for Development?* Center for Global Development, 2018.

2.7.2 Models of Digital Identity

Models are often considered useful in helping individuals and organisations to manage the transition between stages or levels in a developmental journey as per Elrod and Tippett¹²² (2002). The model of Digital Travel Credential (DTC) is based on the conscious and voluntary sharing of both biographical and biometric information of a traveller with governmental systems that will immediately process the information for an accurate risk assessment in part reproducing the pre-emptive element of the SMART world. Once this process is completed, the personal credentials (identifier) are validated by a government authority that adds official signed attestation to traveller's identity. At this stage the person will be put on a 'green-list' of trusted people who are already risk-assessed. The credentials will be securely stored in mobile devices or cloud hosted and accessed via biometric authentication giving travelers the opportunity for document-free travel between participating countries.

The ICAO New Technology Working Group is currently looking to standardize¹²³ the DTCs within a parameter composed of the following principles:

1. DTC must be at least as secure as the e-passport; 2. DTC data must be derived from the e-passport data and must be produced by the same issuing authority; 3. The life cycles of the DTC and the e-passport must be independent of each other; 4. No changes must be required for the current e-passport issuance procedure; 5. Revocation of the DTC must not result in revocation of the associated e-passport.

Even the EU Commission, although not officially discussing around a seamless concept, had planned in its original 2013 SMART program, the inclusion of a Registered Traveller Programme (RTP). It would have given frequent third-country travellers the option of pre-screening, so that they would have been able to use the automated border control systems like Member States' nationals. However, when the Commission put forward a new 'smart borders package', in 2016, it withdrew its 2013 proposal for a RTP.

According to Corradini et al¹²⁴ (2007),

¹²² P. D. Elrod and D. D. Tippert, 'The Death Valley of Change', *Journal of Change Management*, vol. 15, no.3, 2002.

¹²³ ICAO Facilitation Panel (FALP), 10th Meeting. Recent facilitation developments in the UN and other international organizations, 2018, <https://www.icao.int/Meetings/FALP/Documents/FALP10-2018/FALP10.WP18.One%20ID.IATAACI-FINAL.pdf>, (accessed on 24 March 2019).

¹²⁴ F. Corradini, E. Paganelli and A. Polzonetti, 'The e-Government digital credentials', *International Journal of Electronic Governance*, vol. 1, no. 1, 2007, p. 24.

a digital credential serves the purpose of communicating a statement made by a third party about a subject in a trustworthy manner. As such, credentials constitute a form of digital identity and can be used in distributed settings to establish trust.

Herzberg and Mass¹²⁵ (2001) also describe a digital credential as a

statement by an issuer on some properties of the subject of a credential, that is digitally signed by the issuer and that is presented by the subject to relying parties. In a digital setting, the party that issues a credential is called the credential issuer. The party that accepts a credential is called the relying party (or verifier).

The seamless border concept has been built around the idea of digital travel credentials solution that, according to WEF¹²⁶ (2018), is based on the *bona fide* travellers willingness to share specific identity information (e.g. biometric, biographic and travel history) to governmental actors such as border control agencies for risk-profiling. According to Leese¹²⁷ (2013) the

status as trusted traveler is something that is desired and which has advantages and disadvantages that might have been weighed against each other, passengers would simply “pay” for low-risk status with their personal information upon assurance that their information is securely stored, properly used and not manipulated and ultimately facilitates a seamless traveller experience with minimum BCP screening and minimum loss of journey time.

The same basic idea also applies to the transport of goods and merchandise.

As this research is exploratory in nature and focused on future border integrity there is limited academic literature available that articulates how a new strategic vision for future seamless border control processes can be developed to facilitate the increasing international traveller flow. But as already asserted above, keeping some elements unvaried, most of the academic research consulted conducted in the previous section remain useful and valid.

2.7.3 The seamless travel experience

The next stage of the literature review focused on the available literature that articulated the requirement for maintaining adequate efficiency (i.e., maintaining the control check as quickly as possible) while assuring effectiveness (detect potential threats while facilitating *bona fide* passengers) thorough the implementation of seamless processes. This section also considered the concept of potential burden and ethical issues involved.

¹²⁵ A. Herzberg and Y. Mass, ‘Relying party credentials framework’, *Electronic Commerce Research*, vol. 4, no. 1-2, 2001, p. 23.

¹²⁶ WEF, ‘The Known Traveller Unlocking the potential of digital identity for secure and seamless travel’, p. 14.

¹²⁷ M. Leese, *Computer Law & Security Review*, p. 486.

The seamless traveller journey differs from the previous SMART concept as seamless means a non-stop process. In other words, even though biometric checks on entry and exit are performed, they are transparent for the traveller. In this concept the traveller shares on a voluntary basis both biographic and biometric information with a governmental system that after an accurate risk assessment (here reproducing the pre-emptive element of the SMART concept) that validates the person.

The validation consists of creating a certified digital travel credential (DTC). In such context, the biometric information will be used to match the traveller with the one captured when crossing the borders (i.e., facial images, fingerprints) no matter of the channel used (i.e., eGates and/or seamless tunnel or walk-through border) where actually the trusted traveller is being recognised by facial recognition cameras as somebody who has already been approved.

According to Broeders and Hampshire¹²⁸ (2013) technology will enable the identification of travellers prior to their arrival so enacting the pre-emptive element of the ‘*mobility governance model*’ that, according to Pangbourne et al.¹²⁹ (2018), is a recent concept already seen in the Smart mobility which represents ‘*a hybrid innovation, as a platform technology combined with a business model for delivering integrated access to transport services*’. According to Stead¹³⁰ (2016), this is also a response to the

ongoing and urgent need for the transport sector to address local and global problems that it plays a significant role in creating: urban congestion, noise, air pollution, public health, transport safety, unequal access to services, and climate change emissions.

This means that ‘*human mobility flows are therefore accompanied*’ by the transmission of personal data including biometrics which are used to identify and categorize passengers through three distinct processes: black, green, and grey. This categorization is aimed at blocking access for some already known passengers and interdicting their travel (black), speed it up for others (green) and increasing scrutiny through risk analysis and profiling, with a view to identifying and interdicting ‘suspect’ individuals (grey) for others.

¹²⁸ Broeders and Hampshire, p. 1205.

¹²⁹ K. Pangbourne et al., ‘The case of Mobility as a Service: a critical reflection on challenges for urban transport and mobility governance’, *Governance of the Smart Mobility Transition*, 2018, p. 2, http://eprints.whiterose.ac.uk/141201/7/The%20case%20of%20Mobility%20as%20a%20Service_prepublication_typescript.pdf, (accessed 18 April 2019).

¹³⁰ D. Stead, ‘Key research themes on governance and sustainable urban mobility’, *International Journal of Sustainable Transportation*, vol. 10, no. 1, 2016.

Ronchi¹³¹ (2018), considers the expected changes at borders as a paradigm shift ‘*involving transforming and enhancing today’s security screening process from a “check-point based” (check-everything-at-the-border) to a “check-process based” (check-everything-till-the-border)*’. For a concept based on pre-vetting, the risk analysis element also plays a fundamental role and the security checks must improve from the current ‘memory-less’ approach of the SMART border that do not record any information about the traveller after the risk assessment is conducted, to a more advanced risk-based approach based on both historical and current quantity and quality of information provided. The WEF highlights that the type of technologies to be enacted for seamless border purposes are fourfold:

1) “distributed ledger” that enables trust in the network without a central authority; 2) “cryptography” that allows for an appropriate level of security in sharing information; 3) “biometrics” that connects the physical and digital world; and 4) “mobile interface and devices” that allow travellers to carry their digital identity with them.

Interesting is the position of Hurrey¹³² (2013) who highlights that ‘*the technology is already available but now requires research on how practically it can be leveraged and combined with security processes and border management*’.

In this huge area, different stakeholders operate in a collaborative manner, involving not only law enforcement agencies, but also private and technological firms. This is well explained by Doyle¹³³ (2010) who introduces the need for organizational change, such as the outsourcing of certain functions. Furthermore, the increased use of technology also entails other issues such as, according to Koslowski¹³⁴ (2005), that border officers become

overly dependent on biometric scans and automated watch list checks and fail to develop or retain interviewing and document inspection skills resulting in a deterioration of human capital in frontline positions.

¹³¹ Ronchi, ‘Improving Border Check Point Security’, p. 4.

¹³² C. Hurray, ‘The ‘Swiss Army Knife’ Approach to Border Control: Multitasking in a Multi-threat World’, *European Intelligence and Security Informatics Conference*, 2013.

¹³³ Doyle, p. 18.

¹³⁴ R. Koslowski, ‘Real challenges for virtual borders: the implementation of the US-VISIT’, *Report Migration Policy Institute*, 2005, p. 55.

2.7.4 The ethical dilemma around the use of biometric information for border control

Finally, the increased use of biometric information, regardless of whether it is processed in eGates as per the previous paragraph or exchanged in secure data sharing platform activating seamless process, generate ethical dilemmas, particularly concerning normative assumptions and privacy protection and its possible unethical use.

According to Ulbricht and von Grafenstein¹³⁵ (2016), there is a need ‘*to draw the line between use and abuse*’ that ‘*arms state agencies with the capacity to make routine and systematic searches*’ where ‘*individuals are classified under certain risk categories*’ without public transparency.

According to Donida Labati et al.¹³⁶ (2016)

biometrics, being based on the differences of bodily features, can be used to categorize people in ways that can have considerable ethical, legal or political significance, such as gender, age, ethnic or weight categories.

This approach reminds the iper-criticized Lombroso’s principal criminological theory, which was based on the link between physical anomalies and criminal behaviour. This theory although recently reappraised after a long oblivion as per Gatti and Verde¹³⁷ (2011) who highlighted that Lombroso’s principal theory has been re-proposed by several modern studies who claim that ‘*Lombroso appears to have anticipated many modern conceptions regarding delinquent behavior and criminal justice*’¹³⁸.

Moreover, the problem of privacy protection is particularly relevant in regard to the biometric data used. Indeed, biometric information can be used to recognize individuals automatically and with greater accuracy than traditional methods of biographic information, and a misuse of such biometric information can have dangerous consequences: in fact, the theft of biometric data is not always detectable (e.g., a fake fingerprint), and the thief may be able to impersonate the victim for an indefinite amount of time.

Donida Labati et al. (2012) highlights four elements to be taken into account when implementing methods and procedures for protecting the privacy of biometric data

¹³⁵ L. Ulbricht and M. von Grafenstein, ‘Editorial: Big data through the power lens: Marker for regulating innovation’, *Internet Policy Review*, vol. 5, no. 1, 2016, p. 5.

¹³⁶ Donida Labati et al., p. 30.

¹³⁷ U. Gatti and A. Verde, ‘Cesare Lombroso: Methodological ambiguities and brilliant intuitions’, *International Journal of Law and Psychiatry*, vol. 35, 2012, pp. 19-26.

¹³⁸ D. O. Friedrichs, *Trusted Criminals: White Collar Crime in Contemporary Society*, Wadsworth Cengage Learning, 2010.

Firstly, communicate the scope of the system to the users with data never used outside the defined scope of the system. Secondly, the user shall maintain control of personal data and decide when to withdraw from using the specified biometric modality. Thirdly, clearly disclose to the users the purpose of the system, the enrolment and matching modalities, and the methods used for data protection. Fourthly, the data protection techniques should be deployed to avoid theft of biometric information by adopting cryptographic representation of the biometric data.

Diaz¹³⁹ (2014), in an interesting study regarding the use of biometric information in border control, highlighted that

public policy for biometric data collection and processing present considerable divergence, so revealing that each nation chooses to employ biometric data in an asymmetric way that expose the traveller to arbitrary use so posing both short and long-term challenges for international cooperation.

2.8 Conclusion

Throughout this chapter the author has been illustrating how INTERPOL has been continuously contributing to border security worldwide in the last two decades on a global scale from a legislative, a collaborative and an innovative perspective.

This contribution has strategically concluded with an INTERPOL statement using the term border integrity and included it in its global policing goals. The term border integrity is not overtly explained or defined in the literature reviewed, however it appears that while the term is not fully identifiable in the analysis of the literature review for this dissertation, it is the term that INTERPOL has chosen to use that suggests border integrity is more than mere border security and points towards a future space where people, technology and biometrics interact seamlessly for both the traveller and business from a personal facilitation and global border integrity perspective.

However, it is undeniable that the greater integration of INTERPOL databases into national border applications is mainly attributable to the INTERPOL leveraging of advanced technologies in the years immediately before the border world shifted from the manual border control toward SMART systems. When this shift materialized post 9/11, some of the INTERPOL capacity originally developed for enhancing the war against crime and terrorists turned out to perfectly fit the SMART border environment in construction in many part of the world.

¹³⁹ V. Diaz, 'Legal challenges of biometric immigration control systems', *Mexican Law Review*, vol. 7, no. 1, 2014, p. 3.

As a matter of example, as per Horvath et al.¹⁴⁰ (2018), when Frontex needed to find the backbone to share their Quick Check Card (QCC), a new product to describe fraudulent travel and identity documents, they found in the INTERPOL I-24/7 network the perfect environment for distributing this product.

The literature suggests that the introduction of the SMART border has indeed been a paradigm shift in border security as it introduced the use of systems that extended the space and time of the border control from a check-everything-at-the-border to a check-everything-till-the-border.

One clear point emerging from the literature review is that the role of the technology that was, in most of the cases, developed for different purposes than border security is adaptable and has been embedded in the border environment context.

However the literature also make clear that, as the technology evolves, its ability for better securing the border is exploited globally and nationally. This is well demonstrable with the embedding of biometric identifiers on the chip of electronic documents so combining into a single biographical passport (i.e., in the Machine Readable Zone) with biometric data (i.e., image, fingerprints).

The same advantage accrues for border control with the introduction of pre-emptive instruments such as API and PNR. This provided the border authorities with information in advance of the physical arrival of the traveller so enabling border authorities to conduct advanced risk analysis. The pre-emptive concept introduced another paradigm shift: travellers, who previously were considered equal throughout the journey, began to be divided into risk categories.

The next generation of border control, the seamless one, will possibly open new opportunities for a smooth processing of travellers, in particular given the big increase of international passengers expected in the coming years. However, the seamless concept once applied is not expected to be a new paradigm shift in border management but a recalibrated use of the process already crafted by the SMART initiatives through new technological models able to identify threats, qualify identity, and importantly able to be intelligent enough to automate systems and processes.

¹⁴⁰ S. Horvath et al., 'INTERPOL and Frontex Collaborate to Improve Frontline Document Checks', *ICAO Trip Magazine*, vol. 13, no. 1, 2018, p. 8.

Finally, the literature review was somewhat limited with respect to the seamless concept and in order to get greater clarity regarding this element of the research the interviews with key experts was vital. In the next chapter the author will outline how the research was conducted, how the participants for interview were identified and selected, how data was captured and then analysed the why a case study method was chosen and how the case study centered on the IBM and the WEF proposal were approached.

In particular the European IBM was chosen as unit of analysis of the current border environment to better illustrating the current role of INTERPOL as bearer of additional border security layers that operate in a coordinated and complementary way with the other security elements operating in the border context. The WEF proposal being one that is trying to put together in a coordinated and integrated way the different elements are expected to become key for the future border integrity (i.e., extende use of biometric data, contactless biometric readers, etc.) was chosen as unit of analysis to illustrate the concept of future seamless border integrity.

3. Research Methodology

The previous chapter has synthesised the literature sets pertaining to border security, virtual borders, seamless travel, INTERPOL and future innovation in border integrity. This has created a context and an awareness of the existing body of knowledge pertaining to this research.

This chapter will elucidate on the research design, giving clear information as to the methodological approach adopted for this research.

The first decision taken by the author concerned the choice regarding the implementation of either a quantitative or qualitative research. The latter, focuses on meanings and processes and are not examined or measured in terms of quantity, amount, intensity or frequency; the former focuses on measuring and verifying variables. The difference between the two approaches is outlined by Bryman¹⁴¹ (2016), with the quantitative research well anchored to the natural science model (positivism) and the theories describing the objective of the research in a deductive approach while the qualitative one interpreting the phenomenon and therefore generating theories in an inductive approach. Carr¹⁴² (1994), analyses strengths and weaknesses of the two methods affirming that *'neither approach is superior to the other, stating that qualitative research appears invaluable for the exploration of subjective experiences, and quantitative methods facilitate the discovery of quantifiable information'*.

Bryman¹⁴³ (2016) includes a different research approach combining the qualitative and the quantitative ones and then analysing both from different shades such as *'a qualitative research approach to quantitative research'* and *'quantitative research approach to qualitative research'*. Due to the fact

¹⁴¹ A. Bryman, *Social Research Methods*, Oxford University Press, 2016. p. 32.

¹⁴² L.T. Carr, 'The strengths and weaknesses of quantitative and qualitative research: what method for nursing?' *Journal of Advanced Nursing*, vol. 20, 1994, pp. 716-721.

¹⁴³ Bryman, *Social Research Methods*, Oxford University Press, 2016, p. 629.

that this research is based on a hypothesis that is future oriented, the choice came down to a qualitative research approach that appears more practicable than a quantitative analysis of something not measurable or, at least, not yet measurable.

The appropriateness of this approach appears in line with Mander¹⁴⁴ (2017) who differentiate between the two researches approaches taking into account the main question, with ‘how’ that relies more on qualitative research, and ‘how much’, which is more suitable for the quantitative methods of research. This differentiation is also confirmed again by Bryman¹⁴⁵ (2016), who articulated that an overview of both the contrast and similarities between qualitative and quantitative research are most evident when the elements of a qualitative research emerge. These include elements such as the need to rely on the point of view of participants and the fact that the research is focused on emerging theory. This lead the author to conclude that the appropriate research approach was a qualitative approach.

3.1 Research design

The phenomena to be studied is complex as it involves inter-relations between global organizations, travel processes, business processes, standards and technologies associated with border integrity. The research is based on an initial hypothesis that INTERPOL can contribute to the future border management environment. The hypothesis refers to the concept already outlined in the literature review that other major actors in the border management environment are currently looking to INTERPOL for innovative solutions to the myriad challenges of border integrity. This is widely discernible in various UN Security Council Resolution, EU Directives as well as in recommended practices from international fora (ICAO, G7, GCTF, etc.) as previously listed in the chapter 2.3. Although the current way INTERPOL contributes to border integrity has been already analysed in the literature review, it has been also discerned during interviews with experts and further analysed. A deeper analysis of the current INTERPOL positions within the global border integrity was recognized

¹⁴⁴ J. Mander, ‘How to use Qualitative and Quantitative Research to your advantage’, [web blog], 14 July 2017, <https://blog.globalwebindex.com/trends/qualitative-vs-quantitative/>, (accessed 26 February 2019).

¹⁴⁵ Bryman, pp. 400-403.

as key by the author for better understanding and justify this research of INTERPOL to positioning itself in the future seamless border integrity.

The overall method that has been chosen is based on an exploratory case study. The choice of an exploratory case study was influenced by the scarcity of other research outputs in this area, especially formulated hypotheses that can be tested. According to Yin¹⁴⁶, the case study is one of several ways of doing research and it is a preferred method when the following three conditions are met: (a) ‘what’, ‘how’ or ‘why’ questions are being posed; (b) the investigator has little control over events; and (c) the focus is on a contemporary phenomenon within a real-life context. The three conditions seem to fit in this research: firstly, the research question and related sub-question are built over both the ‘what’ and the ‘how’ to explore an hypothetical future environment of border integrity; secondly, as this research built over a concept there is no control over the event as also demonstrated by the limited theory; and thirdly, this research wishes to gain the fullest understanding of a contemporary phenomenon, the globalization of travel, in a well-defined context which is the border environment.

Yin¹⁴⁷ (2014) highlighted five important components in case study: ‘(1) a case study’s question; (2) its propositions, if any; (3) its unit(s) of analysis; (4) the logic linking the data to the propositions; and (5) the criteria for interpreting the findings’.

The first element describes the form of the question that in case study is often ‘how’ and ‘why’ questions. The research question and sub-questions are outlined again here.

Research Main Question

1. How can INTERPOL contribute to future border integrity?

Research Sub-Questions

2. What are the current INTERPOL capabilities that contribute to border integrity?

¹⁴⁶ R. Yin, *Case Study Research. Design and Methods*, p. 29.

¹⁴⁷ Yin, p. 29.

3. What are the innovative border management concepts (including technology) that can support border agencies to improve future border integrity?

- 3.1 What new INTERPOL capabilities have to be developed to maximise the organization's contribution to future border integrity?

The second element, the propositions, is to assist in keeping the right direction within the boundaries of the research and not be tempted to cover everything, consequently in this research the propositions reflect important theoretical issues identified in chapter 2 – the literature review. The ‘possible propositions’ developed by the author were elaborated in accordance with the findings identified in the literature review.

The third element of a case study, is the unit of analysis that is related with the fundamental problem of defining the case to be studied. The identification of a unit(s) of analysis helped the author in controlling the possibility of developing a too vague or too numerous questions that would not have given the possibility to the author to remain within feasible limits.

As the research wants to outline the INTERPOL contribution to future border integrity through a deep understanding of what INTERPOL is currently doing for the global border integrity, the choice of the unit of analysis felt down to the Integrated Border Management (IBM) concept as per the article 4 of Regulation (EU) No 2016/1624 (European Border and Coast Guard Regulation) to outline the current situation, and the 2018 proposal from the WEF¹⁴⁸ that has been launched in the framework of a system initiative on shaping the future of traveller mobility. IBM and WEF concepts as unit of analysis perfectly fits with the research as they give the possibility to anchor the set of material collected in the literature review and in the interviews with the INTERPOL current and hypothetical future border capability.

¹⁴⁸ WEF, ‘The Known Traveller Unlocking the potential of digital identity for secure and seamless travel’, System Initiative on Shaping the Future of Mobility, 2018, p. 1-44.

The fourth element is the data analysis steps through which the data gathered during the interviews is linked to the propositions identified in the literature review. Finally, the fifth element, is the interpretation of the findings.

Since INTERPOL is the only truly global police organization, there is no other example known to the author available for replication of such a study with different elements. Hence, the research adopted a single-case design. The choice of a singular case study for this research is also based on the assertion of Gummesson¹⁴⁹ (1988) that single cases guide research to specific conclusions. From the perspective of this research this will facilitate the identification and isolation of issues within IT-enabled change that are particular to worldwide border integrity.

Case studies can also be divided into holistic or embedded studies. Holistic case studies examine the case in a single unit of analysis with a vision of the phenomenon taken by a higher viewpoint.

According to Rowley¹⁵⁰ (2002) a holistic

approach ensures a helicopter view of the case, but it can be superficial, and may miss changes in the unit of analysis that could impact on the appropriateness of the original research design while the embedded one identify a number of subunits each of which is explored individually; results from these units are drawn together to yield an overall picture.

For this case, having used two different units of analysis (IBM and WEF) an embedded approach has been chosen.

In line with Bryman¹⁵¹ (2016), the research design has been based on a mixed method that combine the primary data generated for the specific purposes of this research through semi-structured interview with the secondary data publicly available such as company reports, governmental speeches and interviews, journal articles, books, archival records etc. However, the necessity to better clarify data from the literature review and primary data required an additional review into the secondary data available ‘out there’ for the researcher to collect and analyse. The use of more than one approach to researching a question is called triangulation and, according to Heale and Forbes¹⁵² (2013), the

¹⁴⁹ E. Gummesson, *Qualitative Methods in Management Research: Case Study Research, Participant Observation, Action Research/action Science, and Other ‘qualitative Methods’ Used in Academic Research and Management Consultancy*, Krieger Publishing Company, 1988.

¹⁵⁰ J. Rowley, ‘Using Case Studies in Research’, *Management Research News*, vol. 25, no. 1, 2002, p. 22.

¹⁵¹ Bryman, pp. 378-381.

¹⁵² R. Heale and D. Forbes, ‘Understanding triangulation in research’, *Evidence-based nursing*, vol. 16, no. 4, 2013, p. 98.

‘objective of this method is to increase confidence in the finding through the confirmation of a proposition using two or more independent measures’.

Semi-structured interviews have been conducted with strategic management from INTERPOL (one representative) and significant stakeholders in border integrity that have major cooperation with the organization of the researcher. This includes one participant from ICAO, one from IATA, two from Frontex, a former head of a national EU border agency currently leading a border association, a former Director of INTERPOL currently in a private ICT industries, and a high level officer on-duty with a EU Law Enforcement Agency.

3.2 Description of the Case Study

As mentioned before, the case study for this research aimed at leveraging innovative ICT solutions for enabling a secure, seamless and personalized journey. According to Meyer¹⁵³ (2001) a study consists of *‘detailed investigation of one or more organizations, or groups within organizations, with a view to providing an analysis of the context and processes involved in the phenomenon under study’*. Crafting the design of case studies is of paramount importance. According to Zainal¹⁵⁴ (2007), a case study method is *‘often used in research of real-life situations governing social issues and problems’*.

Yin¹⁵⁵ (2014) illustrated advantages in using case studies such as the examination of the data in the context of its use, namely within the situation in which the activity takes place, but also to explain the complexities of real life situations which may not be captured through experimental or survey research. The choice of a case study for this research is also reinforced by the viewpoint of both Goldstein et al. (1987) and Eisenhardt¹⁵⁶ (1989) who claim around the utility of case study research when existing theory around a phenomena is not robust and seems inadequate, as it is the case for this research.

¹⁵³ C. B. Meyer, ‘A Case in Case Study Methodology’, *Field Methods*, vol. 13, no. 4, 2001, p. 329.

¹⁵⁴ Z. Zainal, ‘Case study as a research method’, *Journal Kemanusiaan*, vol. 5, no. 1, 2007, p. 4.

¹⁵⁵ Yin, p. 51-63.

¹⁵⁶ K. M. Eisenhardt, ‘Building Theories from Case Study Research’, *The Academy of Management Review*, vol. 14, no. 4, 1989, p. 549.

Likewise, Orlikowski and Baroudi¹⁵⁷ (1991) debate on the great use of case study in the ICT field such as innovation and technology that plays a pivotal role in this research, in contrast with the the *'positivist world view prevalent in information systems research that may be limiting the kinds of knowledge we are gaining about information systems phenomena'*.

Despite these advantages, case studies have received criticisms. Yin¹⁵⁸ (1984) notes that *'too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions'*. According to Tellis¹⁵⁹ (1997), a *'common criticism of case study method is its dependency on a single case exploration making it difficult to reach a generalising conclusion'*.

This case study is based on a single-case. The choice of a single-case is not only due to the lack of similar case available for replication but also to the fact that options for extending the research to other cases would have been prevented by the limited time for the elaboration.

3.2.1 The IBM concept as unit of analysis in the current border environment

The essence of an Integrated Border Management is that it is integrated: at all levels, in all forms of border management cooperation and sharing of information.

IBM may sound like another piece of technical jargon, but is actually the concept the EU has embraced for coherent and coordinated border management systems. It is designed to ensure that Governments maintain secure borders with as little inconvenience to travelers and cross-border trade as possible. It emphasizes co-ordination within and between border services, as well as international co-operation.

Four tier access control model compose the IBM comprising border control measures inside third countries (non-Schengen countries) that do not share a physical border; border control measures inside neighbouring third countries; border control measures at the Schengen external physical borders; risk analysis and measures within the Schengen area.

¹⁵⁷ W. Orlikowski and J. J. Baroudi, 'Studying Information Technology in Organizations: Research Approaches and Assumptions', *Information Systems Research*, vol. 2, no. 1, 1991, p. 24.

¹⁵⁸ R.K. Yin, *Case Study Research. Design and Methods*, Sage Publications, 1984, p. 21.

¹⁵⁹ W. Tellis, 'Introduction to Case Study', *The Qualitative Report*, vol. 3, no. 2, 1997.

According to Moreno-Lax¹⁶⁰ (2017) behind the idea of building an integrated border management there is the certainty that

effective entry control cannot be based solely on checks at the external borders of the Member States but “must cover every step taken by a third country national from the time he begins his journey to the time he reaches his destination”. EU entry/pre-entry controls thus comprise a series of extraterritorial measures carried out abroad.

Eleven main components are taken into account for measuring the effectiveness of the border security:

‘border control’, ‘SAR operations during border surveillance operations at sea’, ‘Risk analysis’, ‘Cooperation with third countries’, ‘MS Cooperation supported and coordinated by Frontex’, ‘Inter-agency cooperation’, ‘Measures within the Schengen area’, ‘Return’, ‘State-of-the-art technology’, ‘Quality control mechanism’, and ‘Solidarity mechanism, EU funding instruments’.

By confronting these eleven elements with the finding from the literature review and the interviews, the author will measure qualitatively how the INTERPOL current capabilities are effective within the current border environment.

The figure below highlights the five critical elements of a seamless border security concept as enshrined in the article 4 (*‘European integrated border management’*) of the Regulation (EU) 2016/1624 of the European Parliament and of the Council of 14 September 2016 on the European Border and Coast Guard agency¹⁶¹.

¹⁶⁰ V. Moreno-Lax, *Accessing Asylum in Europe: Extraterritorial Border Controls and Refugee Rights under EU Law*, Oxford Scholarship Online, 2017.

¹⁶¹ Regulation (EU) 2016/1624 of the European Parliament and of the Council of 14 September 2016 on the European Border and Coast Guard and amending Regulation (EU) 2016/399 of the European Parliament and of the Council and repealing Regulation (EC) No 863/2007 of the European Parliament and of the Council, Council Regulation (EC) No 2007/2004 and Council Decision 2005/267/EC, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1624&from=EN>, (accessed 08 May 2019).



Figure 3.1¹⁶²: The eleven components of the EU Integrated Border Management

3.2.2 The WEF concept as unit of analysis in the future seamless border environment

By way of a preliminary explanation a Working Group on security in travel, facilitated by WEF, has been implemented in collaboration with public and private sector partner organizations from travel, ICT, and tourism sectors, as well as international organizations such as ICAO, IATA, Google, etc. The Group gather three times a year to discuss and reflect upon global challenges impacting the future of security in travel, for example the exponential increase in passengers travelling worldwide and the current limited capacity of airports to manage these volumes in the future and the need to find and test global solutions to address these types of challenges. The outcome of the Working Group is the development of the ‘Known Traveller’¹⁶³ concept which focuses on the use of traveller’s digital identities in each stage of a travel to both conduct pre-vetting risk assessment and security procedures to increase the seamless flow of legitimate travellers through borders. The development of a seamless concept enables border authorities to redirect attention and resources to identifying threats, thus contributing to improved geopolitical security worldwide.

The figure below, taken from the WEF¹⁶⁴ proposal, highlights the five critical steps of a seamless border security concept.

¹⁶² B. Koerner, ‘Integrated Border Management Strategy’, *High Level Round Table*, Warsaw, European Border and Coast Guard Agency, 2018, p. 3.

¹⁶³ WEF, ‘The Known Traveller Unlocking the potential of digital identity for secure and seamless travel’, *System Initiative on Shaping the Future of Mobility*, 2018, p. 1-44.

¹⁶⁴ WEF, 2018, p. 31.

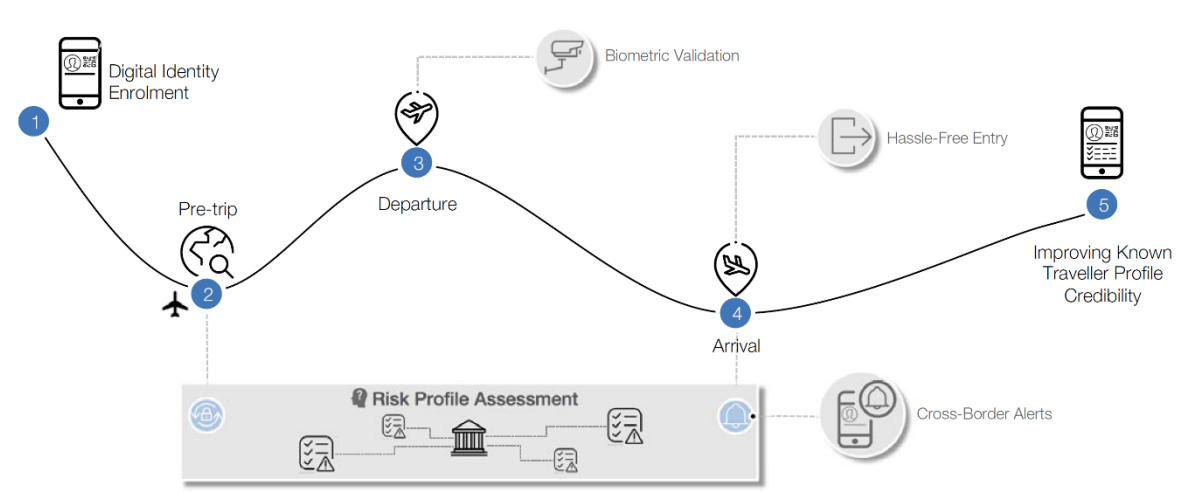


Figure 3.2¹⁶⁵: Overview of the five critical steps

Once illustrated the five steps of the WEF proposal, in the next chapter of this research we will analyse carefully the set of material collected to identify for each step where INTERPOL can contribute with its current policing capabilities or future services in better securitizing the future travel experience.

The journey experience initiates with the enrolment of the traveller in a so called ‘Register Traveller Programme’ (RTP). According to Leese¹⁶⁶ (2016), this kind of programs aim to ‘*improve the management, control and efficiency of cross-border travel flows, the proposal seeks to move away from a “country-centric” approach towards a “person-centric” approach*’. The enrolment consists in providing biographic and biometric (fingerprints and face image) information to a governmental authority that validate the identity. The first step creates a digital identity certified by a Digital Traveller Credential as explained in the section 2.7.2.

The second step, the pre-trip, consists in sharing accurate and verified identity information including additional information such the complete travel history in advance so government authorities can process risk assessment and travel authorization prior to travel. During the third step, the departure one, the traveller navigates through check-in and security, immigration exit control and boards using

¹⁶⁵ World Economic Forum, ‘Overview of selected intervention steps’, *System Initiative on Shaping the Future of Mobility*, 2018, p. 31, <https://www.weforum.org/reports/the-known-traveller-unlocking-the-potential-of-digital-identity-for-secure-and-seamless-travel>, (accessed 17 October 2018).

¹⁶⁶ M. Leese, ‘Exploring the Security/Facilitation Nexus: Foucault at the ‘Smart’ Border’, *Global Society*, vol. 30, no. 3, 2016, p. 413.

seamless identification technology. Sharing trusted biometric identity information with the airport eliminates the need to show a passport and boarding pass and allows access to expedited lanes. In the fourth step, at arrival, the traveller proceeds through an expedited immigration lane that exploit seamless identification technology. Sharing trusted biometric identity information with an airport eliminates the need to show a passport on arrival to validate identity. Pre-screening of previously shared data enables authorities to focus on high-risk travellers only. Finally, the fifth step, once several journeys occurred, the traveller's digital identity has been stamped numerous times. Authorities can trust the attestations, access unmodified travel history and enable potential ease of future travel.

3.3 Data Collection Methods

Three methods have been used to collect material: the literature review, primary data from semi-structured interviews and secondary data from governmental public document, international organization and private industries from tourism and transportation sector as well as ICT focus on border management system.

The literature review according to Bryman¹⁶⁷ (2016) focuses on knowing about the subject of the research, the concept and theories already elaborated, and illustrate disputes about them. At the beginning of the literature review the author faced issues in finding theories and concepts that focus on future seamless border.

The second method was the semi-structured interviews with subject matter experts. This choice fits with the view of Papachroni and Lochrie¹⁶⁸ (2015) who in '*research driven by the interpretation of processes, the viewpoints from actors is strategic for the comprehension of the phenomenon*'. It was important initially to determine whom to contact and at what level within the host organisation as eventually, the acquiesce of the individual with enough authority to approve the research was required. The researcher prepared a series of semi-open questions designed to elicit the views of the respondents and linked them to both the concept and theory acquired and case study previously elaborated. The

¹⁶⁷ Bryman, p. 6.

¹⁶⁸ A. Papachroni and S. Lochrie, 'Case Studies and Data', in K. O'Gorman and R. MacIntosh, *Research Methods for Business & Management*, Goodfellow Publishers Ltd, 2015, p. 82.

choice of semi-structured interviews was driven by the necessity of analysing theoretical concepts and life situations in future scenarios. The use of semi-structured interview for situation that need to be better know is also underpinned by Bryman (2016).

Participants have been given enough flexibility to highlight her/his point of view regarding the phenomena even going off the topic list when certain argument had to be deeply elaborated. At posteriori, this flexibility associated with the heterogeneity of the group created complexity for the further analysis as the data captured turned out to be varied and from different perspective, did not facilitate the identification of common viewpoints.

This difficulty is also recognized by Bryman¹⁶⁹ (2016) who highlighted for qualitative interviewing the importance of *'going off at tangents to have an insight into what the interviewee sees as relevant and important'*. Despite the encountered difficulties, going with more structured interview would have meant confining the experts within the boundaries and the current limit of the theory. Furthermore, a more structured interviews would not have allowed the experts to go beyond the WEF concept, and which the proof of concept still to be demonstrated, it would have limited the spectrum of the research.

As mentioned above, the list of questions while was difficult task to undertake and compose, as navigating into future concepts and theories is fraught with danger, the comprehensiveness of the literature offered considerable guidance to the author for the logical progression of the research. In order to increase trust with the research topic, a 'pilot interview' was conducted with an expert within the INTERPOL organization who assisted the author in refining and re-shaping the questions in a more logic way.

All the interviews' information gathered has been recorded electronically, transcribed into a word document, and safely stored until final disposal at the completion of the research. Despite having the possibility to go back to the interviewees with further question and/or clarification this was not necessary with any of the experts. The transcription of the interviews are in the annex B.

The data collected played a pivotal role in addressing the primary research objective. In this case, the study has observed the confidentiality of the participants and information provided thereof. The

¹⁶⁹ Bryman, p. 466.

participation consent has been shared with the participants who returned the consent signed to the researcher before the interview has been conducted.

Finally, the third source of information came from the secondary materials used to back up the collected data and information. The use of peer-reviewed journal articles, books, and reviews have ensured adequate data for the study. It also allowed the researcher to gain a deeper understanding of the perceived changes in border management and the point of views expressed by the stakeholders that are recommending the use of new technologies in border integrity. This understanding was greatly enhanced by the insights gleaned from the interview participants and their wide knowledge and awareness of innovations in border management process and technologies.

The merging of these three data collection methods helped the author to address and overcome the issue of the research, being an exploratory case study addressing future border management, did not have wide source of information available. Such lack of material involved not only the academic one, but also material coming from practitioners, expert working groups on border related issues as well as legislative provisions.

3.4 Settings and participants

A total of eight persons were interviewed, all of them with senior positions in their national or international organizations with proven knowledge of INTERPOL due to collaborative experiences and in some cases even with the author of this research.

The International Civil Aviation Organization (ICAO) is a UN specialized agency, established by States in 1944 to manage the administration and governance of the Convention on International Civil Aviation (Chicago Convention). ICAO and INTERPOL have signed a Memorandum of Understanding in 2000¹⁷⁰. With the ICAO representative, the author has already developed strong collaboration in optimizing, harmonizing, and improving quality of data exchanged between private & public (i.e.,

¹⁷⁰ Memorandum of Understanding on Cooperation between the International Criminal Police Organization – INTERPOL and the International Civil Aviation Organization, 2000, <https://www.interpol.int/content/download/11000/file/INTERPOL-ICAO.pdf>, (accessed 05 April 2019).

API/PNR systems) as well as for developing standard and recommended practices for aviation security.

IATA is the trade association for the world's airlines, representing some 290 airlines, 82% of total air traffic¹⁷¹. IATA supports many areas of aviation activity and help formulate industry policy on critical aviation issues. With the IATA representative the author has also developed a strong collaboration in the area of new concept for processing passengers based on an effective balance between facilitation & security (again focusing on API and PNR).

Frontex, the European Border and Coast Guard Agency, has a working arrangement with INTERPOL signed in 2009¹⁷². With the Frontex representatives participating in the two interviews the author is actively collaborating in Frontex border operation and in working groups related to the exploitation of INTERPOL capabilities in EU border smart solution.

A former Director General of the national border agency of an EU country who was also an interview participants, is currently leading a border association to bring together experts, practitioners, academics, policy makers and technology providers to develop and promote best practice in the application of modern border management principles and the intelligent use of new and emerging technology.

Another participant to the interview is currently a high rank officer of a national Law Enforcement Agency from an EU country which INTERPOL collaborates with in the area of identity management and use of biometric at border.

Finally, the last two interviewees have a strong connection and knowledge of INTERPOL, one acting as Director for six years within the organization and currently a senior office holder in an international information technology firm and the second still in the staff of the INTERPOL organization.

An overview of all participants draws the attention on respective responsibilities within their agency/organization with respect to border security but also their different background and the different element of the border management they deal with. Definitely, an overview of the participants

¹⁷¹ About us, <https://www.iata.org/about/pages/index.aspx>, (accessed on 04 April 2019).

¹⁷² Working Arrangement between the International Criminal Police Organization – INTERPOL and the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union – Frontex, 2006, <https://www.interpol.int/content/download/11150/file/InterpolFrontex.pdf>, (accessed on 05 April 2019).

shows a heterogeneous group. The interviews have been contacted either via telephone or WhatsApp message and once their availability to be interviewed had been given they have been addressed with an official email message via the corporate email of the researcher.

The emails contained, as attachments, an introductory letter, a semi-open list of questions as Annex I, and a consent form as annex II. These three documents duly sanitized by any reference to the participants are in the Annex YY for reference. The interviews have been conducted either in person, or via skype, or via telephone, depending on the preference of the experts as well as the internet bandwidth which has driven towards one means or another. The duration of the interviews was approximatively 60 minutes.

The semi-structured interviews with the key stakeholders helped to qualify the data emerging from the desk research as well as confirm that INTERPOL can contribute to global border security. The development of the questions has been a long process initiated during the development of the research proposal with the focus on the main question and related sub-question that have been maintained unaltered. Additional questions needed to better outline the research focus have also been refined during the literature review part of the research. However, due to the heterogeneity of the group the questions have been elaborated with maximum flexibility during the interviews aiming at receiving the feedback from the experts seen from their angle at all times.

As already stated, the researcher has also conducted one pilot interview with one of his superior and it was really important to better set the scene and refine the first draft of the questions.

Finally, the researcher tried also to keep an equal gender balance and the total number of person contacted for an interview were 10, 5 men and 5 women. The interviews effectively conducted were 8 (5 men and 3 women). Unfortunately two interviews with female persons were not conducted, due to the difficulties to set such as interview considering in both cases their busy agenda and, just in one case, the important zone difference being an expert from New Zealand.

Finally, the author at all times guarded against unintentional bias as advised by Bryman¹⁷³ (2012) being conscious that the research is being conducted on his parent organization INTERPOL's strategy regarding future border's integrity.

¹⁷³ Bryman, p. 39.

3.5 Data analysis

According to Eisenhardt¹⁷⁴ (1989), '*analyzing data is the heart of building theory from case studies, but it is both the most difficult and the least codified part of the process*'.

Again, according to Miles¹⁷⁵ (1979) the analysis in qualitative research is an '*attractive nuisance*' as the richness of data captured is huge. However, it appears immediately difficult to find a way in managing such as variety of data: according to Bryman¹⁷⁶ (2016) there are only few recognized methodologies to do that and according to Saunders et al.¹⁷⁷ (2012) no one method is standardised to analyse qualitative data.

Since the author has not had previous experience in developing academic research, the method chosen was the one giving the best indication to the author as follows. The data from the interviews was initially analysed using the coding method with identification of key concept, words and categories as per Bryman's¹⁷⁸ (2016) coding techniques.

The second step utilised was to identify common elements from the coding able to elaborate a set of themes using Miles and Huberman¹⁷⁹ (1994) checklist. This approach is also endorsed by Rowley¹⁸⁰ (2002) who suggest the development of '*a descriptive framework for organising the case study. Thus a framework of sections reflecting the themes in the case study are developed and evidence is gathered within relevant themes, and analysed and compared within these categories, in order to achieve a description of the case study that can be corroborated from multiple sources of evidence*'.

Each theme that emerged was compared with both the other ones and the information emerging from the literature review for relevance and usability.

One of the strengths of this method is the ability to cover both a contemporary phenomenon and its context (Yin 1981).

¹⁷⁴ Eisenhardt, *The Academy of Management Review*, p. 539.

¹⁷⁵ M.B. Miles, 'Qualitative Data as an attractive Nuisance', *Administrative Science Quarterly*, vol. 24, no. 4, 1979, pp. 590-601.

¹⁷⁶ Bryman, p. 570.

¹⁷⁷ M. Saunders, P. Lewis and A. Thornhill, *Research Methods for Business Student*, Pearson, 2012, p. 556.

¹⁷⁸ Bryman, pp. 581-584.

¹⁷⁹ M. Miles and M. Huberman, *Qualitative Data Analysis*, Sage, 1994, pp. 107-120.

¹⁸⁰ Rowley, *Management Research News*, p. 24.

The objective is to provide accurate and relevant findings associated with the main research question and the sub-questions and draw conclusion after identifying the most important requirements for how INTERPOL can facilitate future global border integrity based on the selected case study.

3.6 Quality

In order to ensure quality according to Bryman¹⁸¹ there are three important steps to be taken into account when analyzing qualitatively information collected for the purpose of a research project.

These three are reliability, validity and replication.

Reliability is an important criteria for qualitative researchers and in order to ensure accuracy in a research endeavour, the author must be consistent with the acknowledge theory, which according to Fraenkel and Wallen¹⁸² (2003), recognizes research as reliable *‘when it can be used by a number of different researchers under stable conditions, with consistent results and the results not varying’*.

As per Bryman¹⁸³ (2016), reliability in this research has been measured by comparing the consistency among the interviewees, together with the desk research and literature revision. Thus the verified consistency of people’s responses across the items are supposed to reflect the same underlying construct, so people’s scores on those items should be correlated with each other. In this fashion the author considered the collected information to be stable, therefore giving confidence that the sample was strong enough to answer the research questions.

Validity, per Bryman¹⁸⁴ (2016), assures the *‘integrity of the conclusions [...] generated from a piece of research’*. The author believes that this step has been reached considering the different methodological approach and the expertise of the interviewees.

The choice of the interviewees, as explained in section 3.4, allowed the author to get relevant information from persons highly qualified who had deep and holistic knowledge of the border

¹⁸¹ Bryman, p. 45.

¹⁸² J. R. Fraenkel and N. E. Wallen, *How to design and evaluate Research in Education*, Mc Graw – Hill Higher Education, 2003, p. 23.

¹⁸³ Bryman, p. 169.

¹⁸⁴ Bryman, p. 47.

environment, the interconnection between border authorities and police agencies, and their interaction with INTERPOL.

In this way the researcher had the possibility to get information from people who have gained a complex and inter-dependent knowledge of the organization they represent or has represented and able to positioning and articulate such competence in a global border context.

This approach also is an additional value for ensuring reliability to the research.

Furthermore, the interviews may be easily replicated with other experts in the area of border management, using the same approach.

In addition to Bryman, the quality of this research is also measured in accordance with Guba and Lincoln¹⁸⁵ (1994) through the following criteria that ensure to keep the quality of this research measurable:

1. *Credibility*, through which can be kept an adequate level of validity. It is achievable through the so-called ‘triangulation’ by means of which has to be demonstrated a good match between researcher’s data collection such as interviews and literature reviewed across the relevant areas, and the theoretical ideas.
2. *Confirmability*, through which is kept an adequate level of objectivity. It is achievable through actions conducted in good faith throughout the research.
3. *Dependability*, through which is kept an adequate level of reliability. It is not only achievable as per the way illustrated above, but also through the availability of all the information processed in this research for the purpose of conducting an external ‘auditing’.

The three elements above appear to be naturally fitting with the theme of the research.

3.7 Ethical considerations

Firstly, the author had a universal approach to avoid compromising ethical standards for desired outcomes. Therefore, the outcome of the research is at no point justified by the means as moral sense has prevailed at all times.

¹⁸⁵ E. Guba and Y. Lincoln, ‘Competing Paradigms in Qualitative Research’, in N.K. Denzin and Y.S. Lincoln, *Handbook of Qualitative Research*, Sage, 1994.

Moreover, it was the researcher's objective not to harm participants while conducting the research.

This entailed aspects such as physical and emotional harm which may lead to injuries, result in loss of self-esteem or induce stress that is detrimental to the participants.

Furthermore, it was imperative to identify all the potential ethical challenges that might arise from the methodological approaches selected.

The approach adopted was to selected candidates based on their expertise in border management and past experience in dealing with INTERPOL.

The candidates were informally contacted explaining the aim of the research, afterwards a formal invitation with further explanation about the willingness of the author have been sent out to those manifested interest in participating to the research.

Before the interview, participants have been asked to sign an informed written consent where they allowed the author to use the collected information from their answers in this scientific activity, as already mentioned above.

Obtaining written and verbal informed consent from the relevant sources before conducting the research has provide room to assure participants of their confidentiality in this voluntary process.

The author provided all interviewees with an informed written consent form, as referred above, for them to be sure of the use of their declarations (exclusively for scientific means) and the voluntary participation and to guarantee the anonymousness of the way in which their declarations would be used.

Finally, participants were informed of their right to withdraw at any time from the process and the author asked each interviewee a final question and answer to clarify any final doubts the participants have raised.

Eventually, the author started to apply the chosen methodology for the analysis, with the compromise of omitting any possibility of identifying the participants to the readers of this report.

Moreover, compliance with the principles enshrined in the article 5 of the General Data Protection Regulation¹⁸⁶ has governed the information processing steps whereas the researcher has maintained

¹⁸⁶ General Data Protection Regulation (GDPR), 2018, https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules_en, (accessed 5 October 2018).

objectivity in any activity done in the framework of this research, by avoiding biased or prejudicial conclusions, to ensure the validity of the results.

3.8 Conclusions

This chapter has outlined the methodology of the research. It has explained why a qualitative approach was most suitable and the rationale for choosing an embedded exploratory case study was also outlined. The units of analysis IBM and WEF were identified and outlined. The selection and participation of interviewees is outlined and how the various type of data was collected and also articulated through the coding technique based on Miles and Huberman¹⁸⁷ (1994) checklist. Finally, ethical considerations were kept in mind at all time by the author.

The next chapter outlined how the data was analysed and the results generated.

¹⁸⁷ Miles and Huberman, *Qualitative Data Analysis*, pp. 107-120.

4. Analysis and Results

4.1 Introduction

This chapter analyzes the data collected from the interviews and creates correlations with both the literature review and the secondary research material such as INTERPOL documents, various governmental reports, and legislation collected in search of patterns, insights, or concepts that seem promising for the research.

The interviews were conducted with the purpose of acquiring relevant information to provide findings for responding to the main question and related sub-questions of the research.

Research Main Question

1. How can INTERPOL contribute to future border integrity?

Research Sub-Questions

2. What are the current INTERPOL capabilities that contribute to border integrity?
3. What are the innovative border management concepts (including technology) that can support border agencies to improve future border integrity?
 - 3.1. What new INTERPOL capabilities have to be developed to maximise the organization's contribution to future border integrity?

Although the interviews were conducted in a semi-structured method, the author prepared a set of questions which had the purpose of setting the boundaries of the discussion and supported the generation of the data that was subsequently analysed.

The 'interview questions' were categorized into three main groups (as in the table 4.1 below) with 'Section 1' (question 1) exploring the concept of 'border integrity' with the purpose to identify an agreed significance, 'Section 2' (questions 2-5) focusing on INTERPOL capabilities and its role in current border management, and finally 'Section 3' (questions 6-15) focusing on INTERPOL's potential involvement in future border management.

Interview Questions

Section 1 - Border Integrity Concept

1. What is your understanding of the 'Border Integrity' concept as per the INTERPOL global policing goal number 2?

Section 2 - INTERPOL Role on current Border Management

2. Based on your collaboration/experience with INTERPOL, what are the current INTERPOL border capabilities and what kind of contributions can they bring to border integrity?
3. Based on your collaboration/experience with INTERPOL, in what ways do you consider INTERPOL contributions most relevant to the concept 'European Integrated Border Management'?
4. What do you consider the main strategic priority areas to be leveraged by a national border authority (or international organization) that enters into cooperation with INTERPOL (e.g. policies, budget, capacity, training, cooperation, information sharing, technologies, etc.)?
5. Based on your experience, what were the main challenges in establishing/implementing stronger border collaboration between member states or international organizations and INTERPOL, both on the political, operational, and technological level?

Section 3 – INTERPOL and the future in border management (seamless concept)

6. What are the different solutions implemented or that are subject to an existing evaluation study to balance passenger flow facilitation and border security?
7. How are the different stakeholders from private companies (airlines, airport managers, security companies, etc.) and the public sector (border controls, customs, etc.) involved in the seamless approach?
8. And how do you envisage INTERPOL collaboration with them?
9. What is the difference between the SMART border initiatives and the seamless border concept?
10. How can INTERPOL capabilities be operationalized with seamless borders?
11. What are the challenges for the new seamless concept?
12. Do you expect that we will get rid of passports in the coming years with authentication and identity management being completely performed through biometric identifiers?
13. Do you think that the global INTERPOL role as repository of SLTD can be replicated with biometric information? Do the current technologies very quickly perform checks '1 to n' (with n being the entire content of biometric databases) so substituting the current 1 to 1 (biometric check against biometric in the passport)
14. Do you think that the current ABC concept which includes 1 to 1 biometric control, biographical check against databases, and travel document authenticity control will be redesigned to operate differently?
15. What are the risks that the future seamless border concept could bring?

Table 4.1: List of interview questions

The analysis of these three categories of questions generated the specific conclusions and recommendations outlined in Chapter 5.

Each group of questions was initially analyzed independently and only afterwards were they correlated with the other questions for common patterns, findings, and results.

For each of the 'interview questions', the author has developed the table 4.2 below designed around the five important components in the case study illustrated by Yin¹⁸⁸ (2014). The '*Secondary Research*

¹⁸⁸ Yin, p. 29.

Question’ in the first column, the *Propositions*’ elaborated by the author according to either the findings identified in the literature review, the elements retrievable from the unit of analysis, or INTERPOL’s objectives in border integrity in the second column. The *Unit of analysis*’ is in the third column and, in the fourth column, the *result*’. The results ranged through four possibilities: fully confirmed; partially confirmed; controversial; not confirmed.

Since this research focuses on both the current and the future border environment, the author required two units of analysis identified as follows. The latter identified in the WEF proposal for a seamless travel experience, and the former identified in the Integrated Border Management (IBM) concept as developed in the Regulation (EU) 2016/1624 of the European Parliament and of the Council of 14 September 2016 on the European Border and Coast Guard Agency¹⁸⁹, both units of analysis were already outlined in Chapter 3. As for the Section dedicated to the interpretation of ‘border integrity’, this was accomplished within the literature review. The approach adopted is outlined in Table 4.2.

Secondary Research Question	Propositions	Units of analysis	Results
S1Q1: [Question 1 from the table 4.1]	P1: [From the outcome of the Literature Review]	Literature Reviewed	[Fully Confirmed Partially Confirmed Controversial Not Confirmed]
[S2Q2...S2Q5]: [Question 2 to 5 from the table 4.1]	P2 [...] P5: [From either the outcome of the Literature Review, or the IBM unit of analysis, or INTERPOL objectives]	IBM as per the EU Directive	
[S3Q6...S3Q15]: [Question 6 to 15 from the table 4.1]	P6 [...] P15: [From the WEF proposal Unit of Analysis]	Seamless concept as per WEF proposal	

Table 4.2

The question from ‘Section 1’ was aimed at exploring the interview participants’ knowledge of the scene in the future border integrity environment where INTERPOL has positioned its interest and that the analysis of the literature review and secondary material did not fully clarify. The results of the analysis of the Section 1 question provided the possibility to better suggest an appropriate positioning for INTERPOL’s ‘border integrity’ concept, as articulated in its Policing Goal Number 2.

The questions from ‘Section 2’ were aimed at answering the sub-question 2 of the research to identify the current INTERPOL capabilities recognized as important values for border security. Section 2 results provide a clearer picture of how INTERPOL is currently perceived in the border community.

¹⁸⁹ Regulations (EU) 2016/1624 of the European Parliament and of the Council of 14 September 2016.

The questions from ‘Section 3’ were aimed at answering the sub-question 3 (and 3.1) of the research which anticipated how the technology will be likely to change border management capability and how INTERPOL is expected to react to maintain the position of being a border player that it acquired in the last two decades.

The overall analysis from this chapter, once correlated with the literature review and the material collected in the secondary research gave the author the ability to respond to the research’s main question.

The first preparatory step of the analysis was the transcription of all the interviews into the matrixes which can be found at Annex B. Then a subsequent analysis together with the identification of relevant key concepts (or key words) from each interviewee as per Bryman’s¹⁹⁰ (2016) ‘coding techniques’ was conducted.

The second step was the identification from the ‘coding technique’ of a set of themes using Miles and Huberman¹⁹¹ (1994) checklist. According to Saunders et al.¹⁹² (2012), generating categories as per the themes above ‘*means that you are engaging in the process of analyzing your data*’.

The list of all the key elements from the participants and the theme each element refers to can be found - divided into three tables - at annex C: table C1 pertains to key elements related to the participants’ answers to question 1, while table C2 pertains to key elements related to the participants’ answers to questions 2 to 5 and, finally, table C2 pertains to key elements related to the participants’ answers to questions 6 to 15.

The next steps were to narrow down the key concepts/words in each theme in a way of grouping them and afterwards comparing these with the ones from other themes according to both a literal interpretation of the concepts, based on the primary senses of the words, and a more analogic one, this based on concept similarities.

In this part of the analysis the author was conscious that there is an important factor to be taken into account: the relevant key words from interviews although strongly linked with the questions and purposes of the research, ultimately remains an interpretative methodology that offers the risk of

¹⁹⁰ Bryman, pp. 581-584.

¹⁹¹ Miles and Huberman, pp. 107-120.

¹⁹² Saunders, Lewis and Thornhill, *Research Methods for Business Student*, p. 560.

improper interpretation which is, according to Choy¹⁹³ (2014), one of the main weaknesses within qualitative research. The author guarded against unconscious bias at all times during the analysis. The result of this part of the analysis helped in the identification of relevant findings that afterwards were correlated with the literature review as being supported from a theoretical viewpoint through the ‘relying on theoretical proposition’ strategy for analyzing case study evidence as per Yin¹⁹⁴ (2014).

4.2 Analysis of the Interview Questions – Section 1

4.2.1 Introduction

This section goes through the analysis of the first question of the interview in Section 1 (labelled S1Q1):

Section 1 question 1 (S1Q1)

What is your understanding of the ‘Border Integrity’ concept as per the INTERPOL global policing goal number 2?

For the purpose of the research it was originally only to be an ice-breaker with the interviewees. Initially the author intended just questioning about the role of INTERPOL in current and future border integrity, in order to discover what was the participants’ general knowledge and expectations about INTERPOL and formulate findings accordingly.

Afterwards, as a response to the analysis of the literature review and secondary material, which did not fully clarify the concept of ‘border integrity’, the author recognized the need for a deeper analysis of the concept.

However, after consideration and due to the fact that INTERPOL anchored its future strategy using this terminology, it persuaded the author to go deeper with this aspect of the research in order to elaborate a definition or, better, an interpretation of border integrity both attributable to one or more of the academic concepts identified during the literature review and recognizable with the answers

¹⁹³ L. T. Choy, ‘The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches’, *Journal of Humanities and Social Science*, vol. 19, no. 4, 2014, p. 103.

¹⁹⁴ Yin, p. 136.

provided by the experts. This was important for the research as the literature was nebulous concerning the concept of ‘border integrity’ suggesting that that the term was not universally recognized.

This was a fundamental step for this research as anything pertaining to future INTERPOL initiatives at borders shall be based on this feature as outlined in this first question.

Below the table 4.3a developed for Section 1 of the interview as per the previous explanation in table 4.2 of Section 4.1.

Secondary Research Questions	Propositions [From theoretical Review]	Unit of analysis
SQ1: <i>What is your understanding of the ‘Border Integrity’ concept as per the INTERPOL global policing goal number 2</i>	P1: The Border integrity concept to be linked with the ‘Whole-of-Border’ doctrine	Literature Reviewed

Table 4.3a

For this section, the proposition used by the author was the one linked to the ‘whole’ approach given by the semantic interpretation of the Oxford Dictionary of the term ‘integrity’. According to the analysis performed in the literature review, the whole approach to managing the borders of the future sits well with contemporary theorising on the ‘whole-of-government’ approach, also known as ‘joined-up-government’. The objective of the analysis is to confirm or refute this approach.

4.2.2 Analysis

The table C1 in the annex C provides an overview of the key concepts extracted from the interviews. From each interview the key concepts have been coded as per the column ID in the table C1. The outcome of this activity was the identification of five different themes that emerged from the analysis and interpretation of the interviewees’ answers.

These themes were ‘*emotional*’, identified from those participants’ answers providing an openly displayed feeling, ‘*critical/skeptical*’, from those participants’ answers that basically rejected the INTERPOL wording ‘border integrity’, ‘*questioning*’, from those participants’ answers that included a counter-question which would provide clarity about the INTERPOL wording; ‘*hypothesis-testing*’, from those participants’ answers that basically recognized as hypothetical the INTERPOL formulation but would need more elements for confirming such hypothetical interpretation; and ‘*definition*’, from those participants’ answers proving their own interpretation regarding the INTERPOL border integrity concept.

As for the emotional and critical/skeptical themes, a very interesting viewpoint comes from

‘Participant A’ who asserted the following:

I struggle to understand what INTERPOL means by the term ‘border integrity’. And I’m surprised as to why that has been selected as a title, because it’s not a common language in a border security environment. So, I don’t know where they’ve drawn that labelling from.

Interesting is also the position of ‘Participant C’ who is simply wondering if this concept is coming from INTERPOL’s outreach purpose:

I think that was like, if I am trying to understand the marketing aspect of INTERPOL, they tried to find something that might look different to a similar problem which was integrated border management, let’s call it border integrity.

Again, very much interesting is the answer from ‘Participant A’ who is wondering about the dimension of this terminology:

Is it all aspects of a common interpretation of integrity, or is it a more narrow focus of an interpretation of integrity? If it’s a more narrow focus, what aspect of that narrow approach is it that INTERPOL is trying to draw upon?

As for the Hypothesis-Testing theme, still interesting is the viewpoint of ‘Participant A’ that recalls the one viewpoint above from ‘Participant C’ by making a hypothesis about the willingness of INTERPOL to create a new terminology ‘*to create a new role for their role in a border setting, and that’s why they’re using this labelling*’. Relevant within this theme is also the approach of ‘Participant B’ who linked the border integrity concept with the EU Integrated Border Management as a ‘*means to go beyond the border and not just safeguarding a physical line*’ so apparently embracing the four tier access control model comprising: 1. border control measures inside third countries (non-Schengen countries) that do not share a physical border; 2. border control measures inside neighbouring third countries; 3. border control measures at the Schengen external physical borders; 4. risk analysis and measures within the Schengen area.

Finally, many participants came with their own definition of ‘border integrity’ with interesting positions from ‘Participant G’ who interpreted the INTERPOL position in a kind of ‘border by design’ concept embracing the whole border control regime such as the ‘*need to ensure that borders are protected against any threat should it be safety, security, but also from the economic point of view*’ but also ‘*it has to still be open to facilitate the movement of legitimate people and goods*’, through both ‘*national coordination*’ and ‘*international cooperation by means of ‘appropriate tools*’.

Finally, the table 4.4 below synthesizes the second stage of the analysis where all the key concepts previously identified (and codified in the column ID of the table C1) from the different interviewees' answers have been further narrowed down by identifying common points (if any) that made grouping them possible, based on both the literal and analogical interpretation ('**correlation**' column).

While grouping the key concept the author went further by counting for each of them the number of interviewees who mentioned it, so conferring the proper relevance to the concept (**R% column**).

The last part of the analysis was searching for each key concept the correlation with elements already emerged in the literature review ('**Linked to:**' column) for relevance and usability.

Themes	Key Concepts (Final)	ID Correlation	R%	Linked to:
Emotional	Generating emotions	E1/E2	25	
Critical / skeptical	Not a standard	C1/D1/D2	62,5	ICAO's Annex 9 ¹⁹⁵
Hypothesis-testing	Creating a new role in border setting (Marketing)	H1/Q4	25	Stalcup ¹⁹⁶ Barnett & Coleman ¹⁹⁷
	Internal and external collaboration	D5/D7	25	IBM CBM
	Means to go beyond the border and not just safeguarding a physical line	H2	67,5	Amoore ¹⁹⁸ (2011) IBM
Definition	Border by design overarching several elements of security and facilitation	Q2/D1/D6/H2/D7/ D3/H3/D4/D2/C1	75	'Whole-of-Government' CBM

Table 4.4

4.2.3 Findings

This analysis conducted in the previous paragraph permitted the author to further analyze the propositions elaborated in the literature review on the current role of INTERPOL for border management.

As for the proposition P1, the link between the INTERPOL's 'Border Integrity' concept and the 'whole-of-government' theory appears confirmed as for the definition given by participants such as for example 'Participant H' who talked about '*border by design*' through the

countries to embed in technology and the process, the rules and regulations they have regarding border and so making sure whoever is not allowed to cross the border is detecting or alternatively whoever is allowed to cross the border without severe check can go through more easily

or 'Participant C' who linked the Border Integrity concept '*with the Integrated Border Management*'.

¹⁹⁵ Annex 9, <https://www.icao.int/Security/FAL/ANNEX9/Pages/default.aspx>, (accessed 13 February 2019).

¹⁹⁶ Stalcup, 248.

¹⁹⁷ Barnett and Coleman, *International Studies Quarterly*, p. 597.

¹⁹⁸ Amoore, p. 63.

This interpretation of the author also appears similar to the ‘whole-of-government’ theorization as well as other viewpoints such as the ‘collaborative border management’ as per Doyle (2010).

This finding above permitted the author to confirm the first proposition elaborated in the literature review on ‘border integrity’ as anchored to the concept of ‘whole of government approach’. Below the table 4.3b which completes the initial 4.3a above.

Secondary Questions	Propositions [From theoretical Review]	Results
SQ1: <i>What is your understanding of the concept ‘Border Integrity’ and how do you perceive INTERPOL in promoting border integrity worldwide as per its global policing goal number 2</i>	P1: The Border integrity concept to be linked with the ‘Whole-of-Border’ doctrine	Confirmed

Table 4.3b

The final stage of the data analysis was to narrow the focus by highlighting the most relevant emerged concepts based on their relevance (i.e., supported by at least 50 percent of the participants and linkable with a theoretical frame). The remaining concepts below are considered the most valuable findings of the analysis as set out in table 4.5 below.

Findings for the INTERPOL ‘border integrity’ concept
‘Border integrity’ is currently neither a recognized term nor standard in the common language but can be recognized as such once outlined by INTERPOL.
‘Border integrity’ is also seen as INTERPOL’s terminology for marketing/outreach itself when trying to shape a new role in the border setting.
From an extended focus, ‘border integrity’ is a kind of ‘border by design’ concept overarching several border elements such as standard, process, technology, rules, risk, information-sharing, global integration, and collaboration.
From a narrow focus the ‘border integrity’ is a concept that embraces the security at borders (proof of identity in order to prevent illegal activity and detect threats) and the facilitation (proof of identity as a means to speed up the processing of trusted travelers).

Table 4.5

4.3 Analysis of the Interview Questions – Section 2

4.3.1 Introduction

This section goes through the analysis of the questions in the Section 2 (S2Q2 to S2Q5 in the table 4.1) with the purpose to respond the sub-question 2 of the research.

What are the current INTERPOL capabilities that contribute to border integrity?

This part of the analysis research is important to qualify past and present border activities where INTERPOL is involved. This analysis was also key for creating the basis to envision a realistic vision for the future, determining the strengths and weaknesses of the organization programs.

The author, before to initiate the analysis has developed the table 4.6 below with each interview question linked to one or more proposition that point to a different unit of analysis. For this research questions the unit of analysis identified came from:

For these questions the propositions were identified from the literature review (propositions P1-P3, P13 and P14), the Integrated Border Management (Propositions P4-P8) and the INTERPOL's objectives linked to its policing goal number 2 'promoting border integrity' (Propositions P9-P12).

The objective of this analysis is to confirm or not whether INTERPOL is currently accomplishing within such propositions. Answering this question would give a clear picture of how INTERPOL is currently perceived in the border community.

Secondary Research Questions	Propositions [From theoretical Review]	Unit of Analysis
S2Q2: Based on your collaboration/experience with INTERPOL, what are the current INTERPOL border capabilities and what kind of contributions can they bring to border integrity?	P1: Information Sharing (Document Databases)	Literature Review
	P2: Information Sharing (Nominal Databases)	
	P3: Information Sharing (Biometric database)	
S2Q3: Based on your collaboration/experience with INTERPOL, in what ways do you consider INTERPOL contributions most relevant to the concept 'European Integrated Border Management'?	P4: Border control	EU IBM
	P5: Risk Analysis	
	P6: Cooperation (internal/external & public/private)	
	P7: State-of-the-art technology	
S2Q4: What do you consider the main strategic priority areas to be leveraged by a national border authority (or international organization) that enters into cooperation with INTERPOL (e.g. policies, budget, capacity, training, cooperation, information sharing, technologies, etc.)	P9: Identify criminal and victim movements and travel	INTERPOL's objectives linked to the policing goal number 2
	P10: Share information with and between border officials	
	P11: Contribute to the establishment of global standards for border security	
S2Q5: Based on your experience, what were the main challenges in establishing/implementing stronger border collaboration between member states or international organizations and INTERPOL, both on the political, operational, and technological level?	P12: Assist member countries with maintaining the integrity of their security documents	Literature Review
	P13: Building Trust	
	P14: Fundamental Rights	

Table 4.6a

4.3.2 Analysis

The Table C2 in the Annex C provides an overview of the key concepts extracted from the interviews. From each interview the key concepts have been coded as per the column ID in the table C2. The outcome of this activity was the identification of four different themes that emerged from the analysis and interpretation of the interviewees' answers: organizational identity, critical, hypothesis-testing, and challenges.

These themes were '*organizational identity*', providing a set of statements about how participants perceive INTERPOL; '*critical*', when the role of INTERPOL in border-related matter is not recognized or not identify, '*hypothesis-testing*', recognized an hypothetical position for INTERPOL

that however need more elements for confirmation; and ‘*challenges*’, when INTERPOL is encouraged in undertaking specific activities basically to fill global gap in international security.

As for the organizational identity theme, interesting is the viewpoint of ‘Participant D’ who stressed about the INTERPOL contribution as supplier of ‘*the capabilities that we need at the border such databases of individuals and documents and interoperable solution*’. The association between INTERPOL and its capabilities is partially acknowledged by ‘Participant E’ who affirms about the *SLTD database of document as the INTERPOL main asset*’ but does not acknowledge the association of INTERPOL with the nominal database

other areas where you are active are less well-known to the border agencies, [...] like the red notices, the green notices, the other aspects of your work in borders I’m not sure that many people understand exactly what they are.

Finally, interesting position from ‘Participant C’ who highlighted about the role of innovation at INTERPOL ‘*I am looking now at the calendar, and any opportunity that could bring me to what I know are the developing capabilities of INTERPOL in innovation*’.

As for the critical theme, interesting viewpoint from ‘Participant E’ who warns about the scarce INTERPOL communication about its border activity ‘*your communication with border agencies could be more active*’ through ‘*better communication and an understanding about how INTERPOL will relate to*’. Other, such as ‘Participant A’ critically evaluate the over-exposition of INTERPOL to SLTD as it limits both the whole external knowledge of the organization and eventually the internal willingness to exploit other capabilities ‘*INTERPOL at border rely too much on SLTD and CBT initiative linked with SLTD*’. Finally, ‘Participant F’ critical with respect to the INTERPOL’s ‘*lack of biometric information*’ and the ‘*technological retard to search biometry at border*’.

As for the hypothesis-testing theme, ‘Participant A’ strongly advises INTERPOL ‘*to uplift the relevance of it into a new border setting not limited to SLTD and CBT through embracing next-generation biometrics*’. A different position is the one from ‘Participant C’ who invites INTERPOL to facilitate third countries in joining the EU border regulatory framework to avoid economic consequence if the EU system cannot be used ‘*in the third countries where people are flying to us from*’ resulting in ‘*border crossing point is blocked by enormous queues, people decide not to go [...] has economic consequences. [...]. It’s important that we have interaction with INTERPOL, where you*

are present'. Finally, as per the position of 'Participant A', interesting is the suggestion for

INTERPOL to assume a leading position in both

unify the police operating model and environment at border for industry (airlines and ICT) so that helping in deconstructing the challenges that industry has with interfacing all of these different countries that have different operating models and environments

and *'in technology setting, INTERPOL in guiding countries into using best-in-class technology that identify threats, qualify identity, and importantly are able to be intelligent enough to automate systems and processes'*.

Finally, as for the challenges theme, interesting is the position coming from 'Participant H' who pushes for *'keep up INTERPOL database relevance (quality, update, etc.)'*. To be highlighted also the position of 'Participant B' who advises INTERPOL *'in fostering judiciary polices to provide tailored guidelines to border (with no personal or confidential investigation data) as trend changes constantly'* and the similar one from 'Participant C' who focuses on *'building up and updating the common indicators of risk related to terrorism'*. 'Participant D' instead challenges INTERPOL to enhance *'biometric exchange of information'* while 'Participant F' highlights the *'issue with privacy law preventing collection of biometric data'* likewise 'Participant A' who warns INTERPOL about the *'GDPR as a potential limitation in EU data exchange'*.

In conclusion, the table 4.7 synthetizes the second stage of the analysis where all the key concepts previously identified (and codified in the column ID of the table C2) have been further narrowed down by identifying common points that made grouping them possible, based on both the literal and analogical interpretation (**'ID correlation' column**).

While grouping the key concepts the author went further by counting for each of them the number of interviewees who mentioned it so conferring the proper relevance to the concept (**R% column**).

The last part of the analysis was searching for each key concept the correlation with elements already emerged in the literature review ('Linked to:' column) for relevance and usability.

Themes	Key Concepts (Final)	ID Correlation	R %	Linked to
Organizational Identity	Database (document, nominal, and biometric)	I1/H1/G8	87,5	EU Directives UNSCRs 2178 and 2396
	INTERPOL Integrated Solution	I9/D1	50	WEF seamless Gates et al. ¹⁹⁹
Hypothesis-testing	Uplift relevance with biometrics	H1/I7/G8	25	UNSCR 2178 and 2396
	Uplift relevance with big data and analysis (intelligence/trends)	H2	25	Ronchi ²⁰⁰
	Develop SARPs and harmonizing the police operating model for border police	H4/G7/H3/H5	67,5	SARPS Salter ²⁰¹
	Innovation and technology (guiding countries into using best-in-class technology)	H6/I5/C5/G4	50	IBM Jacobs and Blitsa ²⁰² Broeders and Hampshire ²⁰³
Critical	Border identity rely on SLTD and CBT	C6/Q1	37,5	
Challenge	EU global data depositaries for border security	G1		Schengen Border Code
	INTERPOL to foster collaboration with border guards (data sharing/training). Trust building	G5/H7/G6/I3/G2/H9	50	Doyle ²⁰⁴ Koslowski ²⁰⁵
	Collaboration with privates (i.e., airlines)	G11	12,5	Leese ²⁰⁶
	Keep up database relevance (quality, update)	G12	12,5	IBM

Table 4.7

4.3.3 Findings

Through the analysis previously conducted the author was able to find the result for each proposition as illustrated in the table 4.6b.

As for the proposition P1 is generally confirmed as for instance from ‘Participant E’ who reminds about ‘*SLTD as INTERPOL main asset*’ with systematic searches against SLTD database also urged in the EU Schengen Borders Code.

Proposition P2 sometimes appears controversial as the use of nominal database is not well positioned as SLTD. ‘Participant E’ warns about areas ‘*less well-known to the border agencies [...] like the red and green notices*’. However to be taken into account the UNSCR 2178 and 2396 that urge member states to extend use of INTERPOL databases for enhancing the contrast to terrorism.

As for the proposition P3, although the great emphasis found in the literature review, not only the absence of INTERPOL is confirmed but also criticized by ‘Participant F’ who highlights the ‘*lack of biometric information*’ or challenged by ‘Participant A’, who invites ‘*INTERPOL to uplift the*

¹⁹⁹ Gates et al., p. 1.

²⁰⁰ Ronchi, p. 4.

²⁰¹ Salter, p. 36.

²⁰² Jacobs and Blitsa, p. 125.

²⁰³ Broeders and Hampshire, p. 1203.

²⁰⁴ Doyle, 19.

²⁰⁵ Koslowski, p. 546.

²⁰⁶ Leese, p. 486.

relevance of it into a new border setting not limited to SLTD and CBT through embracing next-generation biometrics’.

Proposition P4 is confirmed by half of the participants such as ‘Participant B’ who recognizes the ‘*INTERPOL systems in place and their use which support very much to complement the European systems with much wider information*’, but it is also recalled in the Schengen Border Code.

As for proposition P5, although it is very clear the role of the risk analysis in the current preemptive border checks, the role of INTERPOL is controversial. Although ‘Participant A’, recognizes the role of INTERPOL as provider of analytical data

uplift the relevance of it into a new border setting through broader access to data with interpretation of that data leading to intelligence and trends that could be fed out into governments or others

others do not mention INTERPOL as a player in risk analysis.

As for the proposition P6, the role of INTERPOL as enabler for collaboration is generally acknowledged. As a matter of example ‘Participant A’ recognizes at INTERPOL to have ‘*established its border identity via collaboration in international crime across borders*’ but INTERPOL is also challenged by other such as ‘Participant B’ who claim stresses to ‘*foster enhancing cooperation with the judiciary polices not in scope of border agencies for sharing more tailored information with border agencies*’.

As for the proposition P7, it is generally confirmed. As a matter of example ‘Participant H’ viewpoint is that ‘*not all of the countries have the same capabilities. So there might also be a role for INTERPOL to try and fill those gaps*’.

As for the proposition P8, this is not confirmed by the participants.

Strongly confirmed is also the proposition P9. ‘Participant D’ urges INTERPOL to enact ‘*UN resolution through proper disclosure of data of known criminals and terrorists, even biometric, coping the GDPR limitation through INTERPOL as a global repository*’, although it ‘*needs at political operational and technological level a lot of fine-tuning*’.

As per the proposition P10, this is also strongly confirmed by most of the participants. ‘Participant B’ acknowledges INTERPOL ‘*to play a strong role in the security of the borders facing the challenges related to use and exchange of information amongst different agencies*’.

Controversial is the result of the proposition P11, INTERPOL participation as global leader in establishing standards and recommended practices is however confirmed by most of the participants such as ‘Participant A’ who invites ‘*INTERPOL to unify the police operating model and environment at border*’, and ‘Participant C’ who encourages ‘*INTERPOL to engage with Frontex in global use of standardized systems to facilitate harmonization*’.

Proposition P12 is also confirmed by those like ‘Participant G’ who invites INTERPOL ‘*to support each state to first ensure that they have a strong identity policy in place in order to have a robust breeder documentation*’ and others like ‘Participant E’ who recalls the use of SLTD for border control when it considers that ‘*INTERPOL does supply a lot of the capabilities that we need at the border such as the travel document databases*’.

As per proposition P13, it is also partially confirmed by some of the participants like ‘Participant A’ who acknowledges the great challenge in enhancing trust among border stakeholder and INTERPOL as facilitator since ‘*trust, at the focal point of all of what needs to be done to optimize border security and bring about a better integrity to it*’.

Finally, as for the proposition P14, the limitation for border guards due to the strict data protection legislation is strongly confirmed by ‘Participant D’ who emphasizes the ‘*legislative limitation in Europe (GDPR) for border management due to the lack of recognition as law enforcement task, not only public task*’ and the role of INTERPOL for border management also seriously compromised, according to ‘Participant B’ by the ‘*EU serious legislative limitations preventing INTERPOL to operationalize its systems*’.

This findings above permitted the author to confirm provided results for each proposition. Below the table 4.6b which complete the table 4.6a with the results.

Secondary Questions	Propositions [From theoretical Review]	Result
SQ2: Based on your collaboration/experience with INTERPOL, what are the current INTERPOL border capabilities and what kind of contribution can they bring on border integrity?	P1: Information Sharing (Document Databases)	Confirmed
	P2: Information Sharing (Nominal Databases)	Controversial
	P3: Information Sharing (Biometric database)	Not Confirmed
SQ3: Based on your collaboration/experience with INTERPOL, in what elements of the concept 'European Integrated Border Management' do you consider INTERPOL contribution most relevant?	P4: Border control	Confirmed
	P5: Risk Analysis	Controversial
	P6: Cooperation (internal/external & public/private)	Confirmed
	P7: State-of-the-art technology	Confirmed
SQ4: What do you consider the main strategic priority areas to be leveraged by a national border authority (or international organization) that enter in cooperation with INTERPOL (e.g. policies, budget, capacity, training, cooperation, information sharing, technologies, etc.)?	P8: Quality control mechanism	Not Confirmed
	P9: Identify criminal and victim movements and travel	Confirmed
	P10: Share information with and between border officials	Confirmed
	P11: Contribute to the establishment of global standards for border security	Confirmed
SQ5: Based on your experience, what was the main challenges in establishing/implementing stronger border collaboration between member states (international organizations) and INTERPOL both on the political, operational, and technological level?	P12: Assist member countries with maintaining the integrity of their security documents	Confirmed
	P13: Building Trust	Partially Confirmed
	P14: Fundamental Rights	Confirmed

Table 4.6b

The final stage of the data analysis was to narrow the focus by highlighting the most relevant emerged concepts based on their relevance (i.e., supported by at least 50 percent of the participants and linkable with a theoretical frame). The remaining concepts are considered the most valuable findings of the analysis as set out in table 4.8 below.

Findings related to the current position of INTERPOL in the global border setting
INTERPOL facilitates global law enforcement cooperation through information exchange which ensures processing of travelers both during real time border control and pre-emptive risk analysis.
INTERPOL enhances collaboration between police and border authorities by developing a national standard operating procedures and policies that incorporate all law enforcement (including Customs in those countries that do not give police powers to Customs officers), transportation sector, and private security into one strategy.
INTERPOL continues the development of innovative database and technical interoperability with national border management systems.

Table 4.8

4.4 Analysis of the Interview Questions – Section 3

4.4.1 Introduction

This section goes through the analysis of the questions in the Section 3 (S3Q6 to S3Q15 in the table 4.1) with the purpose to respond the sub-question 3 and 3.1 of the research (highlighted in *italic* below).

What are the innovative border management concepts (including technology) that can support border agencies to improve future border integrity?

What new INTERPOL capabilities have to be developed to maximise the organization's contribution to future border integrity?

This part of the research serves to analyze how INTERPOL can be a facilitator in the future seamless border. The author, before to initiate the analysis has developed the table 4.9a below with each interview question linked to one or more proposition that point to the unit of analysis designed around the WEF concept for seamless travel.

The objective of this analysis is to get an overview of the main elements that will drive the seamless border and be confirmed whether or not INTERPOL is adequately prepared for the challenge of the future as well as identify the target areas INTERPOL is urged take action for enhancing border security.

Secondary Research Questions	Propositions [From theoretical Review]	Unit of Analysis
S3Q6: What are the different solutions implemented or that are subject of an existing evaluation study to balance facilitation and border security?	P1: Contactless Biometric Reader	World Economic Forum System Initiative on Shaping the Future of Mobility
S3Q7: How the different stakeholders from private companies (air airline operators, airport managers, security companies ...) and public sector (border controls, customs ...) are involved in the seamless approach?	P2: Extended collaboration to enhance public security while facilitating the movement of legitimate travellers	
S3Q8: And how do you envisage INTERPOL collaboration with them?	P3: Foster the development of global policing standard and SARPs for police/border enhanced collaboration	
S3Q9: What is the difference between the SMART border initiatives and the seamless border concept?	P4: Digital Identity Authentication ('Human Centric Model' vs 'Passport Centric Model')	
S3Q10: How INTERPOL capabilities is (can be) operationalized with seamless border?	P5: Integrated solution for biometric data exchange	
S3Q11: What are the challenges for the new seamless concept?	P6: Full Respect of Fundamental Rights	
S3Q12: Do you expect that we will get rid of passport in the coming years with authentication and identity management being completely performed through biometric information?	P7: The physical passport will be substituted by a digital one token-based (DTC)	
S3Q13: Do you think that the global INTERPOL role as repository of SLTD can be replicated with biometric information? Does the current technologies be enacted in a way to perform in seconds check '1 to n' so substituting the current 1 to 1 (biometric check against biometric in the passport)	P8: INTERPOL as repository of biometric data of unauthorized travellers	
S3Q14: Do you think that the current ABC concept which include 1 to 1 biometric control, biographical check against databases and travel document authenticity control will be redesigned to operate differently?	P9: Walking through substitutes eGates physical barrier	
S3Q15: What are the risks that the future seamless border concept could bring?	P10: Data quality	

Table 4.9a

4.4.2 Analysis

The Table C3 in the annex C provides an overview of the key concepts extrapolated from the interviews. From each interview the key concepts have been coded as per the column ID. The outcome

of this activity based on the description above was the identification of six different themes that emerged from the analysis and interpretation of the interviewees' answers.

These themes were '*definition*', proving interviewee' explanation regarding the way they see the future seamless concept; '*challenge*', urging INTERPOL in undertaking specific activities to support the development of a seamless travel experience; '*recommendation*' identified specific role for INTERPOL in the seamless context; '*hypothesis-testing*', recognized an hypothetical role for INTERPOL but needed evidence for confirming such hypothesis; '*critical*', where a clear position for INTERPOL in the management of the seamless travel is not clear, and '*risk*', being an analysis on a new operational environment there are many unclear situation that are generating risks to be taken into account.

As for the definition theme, an interesting position is taken from 'Participant B' who recognizes the paradigm shift introduced by the technology in the seamless concept that differentiate the profile of the passengers,

technologies that are trustful enough, can facilitate work at the border guards and that they can focus where they need to focus instead of being there and doing all the bona fide by doing the same procedures that finally they are applying to all the others.

The same concept is endorsed by 'Participant C' who highlights as the seamless concept introduce the *acquisition of digital information, or face recognition systems, when people are moving in a certain environment which is not requiring them to stop. There is no longer a physical border crossing point, it's a Faraday cage.*

The 'Participant G' makes a distinction between '*SMART and seamless border have both the same objective with the former struggling on security while the seamless border concept, it is much more for me related to travel facilitation*', while 'Participant H' viewpoints is that '*SMART is more in quantitative approach, and seamless more in a qualitative and passenger approach*'. Different viewpoint is that of 'Participant E' who argues that '*a seamless journey differs being a non-stop process. But, seamless traveler is intrinsically linked with SMART as it needs all the constituent parts of a smart border*'.

As for the challenge theme, an interesting position came from 'Participant A' who highlight how '*advanced technology and seamless requirements broadens the integration of data holdings from governments, the citizen, and industry*' and consequently warns about the '*lack of collaboration is*

completely dysfunctional in seamless concept' and, finally, puts in evidence for the need for processing reliable data that INTERPOL

if it wants to be a serious player with integrity, it has to have its data depositary as accurate, relevant and efficient as possible and ensure its MSs' diligent contribution otherwise it would not be contributing to border integrity, but border dysfunctionality.

However, this collaboration also entail, for 'Participant C', that *'security of the information that is transferred and protection of personal information is not solved and it is an issue'*. The issue however, as per 'Participant E' who highlighted the active role of the passenger in the seamless schema, can be managed as *'it's a voluntary scheme because if it's compulsory, people will complain about their data and their privacy'*.

As for the recommendation theme, 'Participant D' urged INTERPOL to get *'responsible for the biometric data'* while 'Participant E' advised INTERPOL to

create a platform of communications for key stakeholders as nothing will work unless you have the control agencies, the transportation business the tech companies and academics researchers working together behind a single vision

including *'the tourism industry to help building trust in technology as tourism highly contributes to GDP. That's going to bring money and jobs'*. Finally, importantly viewpoint comes from 'Participant F' who call INTERPOL *'to promote the data standardisation to increase the contributions to the databases'*.

As for the hypothesis-testing theme, this is the theme with more contribution as being an analysis toward the future need a lot of concept being tested before the seamless concept is proved. 'Participant A' turns the attention on

digital identity that allows for its portability to be shared throughout the traveler process (governments, airlines, back-and-forth, to different vendors and the passenger themselves) with absolute integrity and confidence within those tokens

but also recognize the need for a hybrid environment as *'there is still a virtual and physical element to our borders'*. 'Participant D' highlighted the possible role of INTERPOL as custodian of *'border integrity for a lot of member states by maintaining a biometric database'*. Very interesting viewpoint is the one from 'Participant G' who highlighting the role of the Digital Traveler Credential clarified the need for a *'global governance for any new movement through a model which will have both the virtual token which can be on a smart device such but also continue to have the physical passport'* as

well as the future need for a *'global repository of DTC'* with INTERPOL *'the right place to have this global repository'*.

As for critical theme, the position of 'Participant A' is in relation to the still unclear role of INTERPOL at border as the organization *'went to serious organized crime, counter-terrorism, and cyber. And the biggest hold in that architecture was the lack of one for border'*.

Finally, as for the risk theme, a big risk is highlighted by 'Participant A' who warns *'INTERPOL not to complicate the operating environment with grainy and low-quality info'*. 'Participant G' viewpoints is that *'the risk is heavy reliance on technologies and all related issues [...]. You cannot go only with the technologies, you will still have the human touch needed'* and, correlated risk for 'Participant A' is on the *'dynamic relationship technology/border guards: both to operate in coexistence with official to be recalibrated by making use of technology'*. Finally, an interesting position is taken by 'Participant E', who warns about *'profiling using biometrics, you're entering a dangerous territory where you're analysing and possibly abusing human rights'*.

Finally, the table 4.10 synthesizes the second stage of the analysis where all the key concepts previously identified (and codified in the column ID of the table C3) have been further narrowed down by identifying common points that made grouping them possible, based on both the literal and analogical interpretation (**'ID correlation' column**).

While grouping the key concepts the author went further by counting for each of them the number of interviewees who mentioned it so conferring the proper relevance to the concept (**R% column**).

The last part of the analysis was searching for each key concept the correlation with elements already emerged in the literature review (**'Linked to:' column**) for relevance and usability.

Themes	Key Concepts (Final)	ID Correlation	R%	Linked to
Definition	Extended collaboration than in the current border setting	D2/D10/R9/G14/C6 /R8/R12	37,5	Whole-of-Government IBM elements 4, 5, 6
	Technologies facilitates border guards job	D3/G16/H10/H11	37.5	NPM IBM element 9
	Digital identity ensure integrity and confidence	D4/D8/H2/ D6/D7	50	WEF ICAO
Recommendation	Data quality	R1/G2/G13/C2	25	IBM element 10
	INTERPOL to recalibrate its own operating environment	R3/R4/R11/R13/R14/G5/G6/G11/K7	75	Doyle ²⁰⁷
	INTERPOL to influence border integrity through a biometric DB	R7/R10/G15/D1/G19/H4/G20/H7/H19	75	DTC's ICAO WG
Challenge	Advanced technology and seamless require broadens data holdings	G1/G19/H15/C3	37,5	Ronchi ²⁰⁸
	Security and data protection issues (seamless as a voluntary scheme).	G8/G10/K1/K8/K11 /D9	62,5	WEF ²⁰⁹ Leese ²¹⁰
	INTERPOL identity problem	G17/C1	25	
Hypothesis-Testing	Virtual (DTC) and physical (passport) elements together.	H1/H3/H12/H13/H14/H16/H17/G9/G22	50	DTC's ICAO WG WEF ²¹¹
	INTERPOL sets up a database of registered (trusted) travellers	R2/H6/H8/H9/H18	50	WEF Leese ²¹²
Risk	Relationship technology/officials	K2/K6	25	Koslowski ²¹³
	Over-reliant technology environment	K3/K5/K12	25	
	EU challenges INTERPOL	K4	12,5	GDPR
	Challenge to enrol and register people in some part of the world	K10	12,5	Gelb and Diofasi Metz ²¹⁴
	New technical architecture disruptives	G3/K9/G4	25	WEF ²¹⁵ Hurray ²¹⁶
	Digital borders' driven by industry	G7/H5/D5/R5	25	NPM

Table 4.10

4.4.3 Findings

Through the analysis previously conducted the author was able to find the result for each proposition as illustrated in the table 4.9b.

As for the proposition P1, the use of seamless border reader such as the face, finger-print, or iris resulted the most important solution to be implemented for activating the seamless travel experience how strongly endorsed by 'Participant A' who reminds that in this way *'you're optimizing the environment, where it's contactless and you just walk through'*. However, the same participant also turns the attention over the fact to the 'physical elements' of the seamless border *'are required if the*

²⁰⁷ Doyle, p. 19.

²⁰⁸ Ronchi, 6.

²⁰⁹ World Economic Forum, p. 6.

²¹⁰ Leese, p. 486.

²¹¹ World Economic Forum, p.5.

²¹² Leese, p. 486.

²¹³ Koslowski, p. 55.

²¹⁴ Gelb and Diofasi Metz, p.1.

²¹⁵ World Economic Forum, p. 6.

²¹⁶ Hurray, 288.

identity doesn't match or you are concerned about the identity'. Therefore, although confirmed that the seamless border is characterized by seamless biometric reader the use of other identifier is still needed.

As for the proposition P2, this appear fully confirmed as supported by 'Participant A' who highlights as the seamless requires broader '*the integration of data holdings from governments, the citizen, and industry*' confirmed the request for an extended cooperation compared to that in the current border setting.

As for the proposition P3, this is quite controversial. While 'Participant B' is worried about the different level of development that turns out with fragmented standardization '*you cannot even consider standardising globally*' as '*bigger challenge to enroll and register people in some part of the world with serious limitations to apply for an identity document that have negative consequence on seamless border*', 'Participant F' strongly recommends '*INTERPOL to promote the data standardisation*' but, on the other hand, 'Participant A' criticizes INTERPOL in this context wondering

how is it doing that? It presents itself with standards in relation to NCBs but how well does it lease those standards? Very poorly. So, it's got to be careful in what it aspires to. So, if it's not going to evolve its own standards, what standards is it going to subscribe to support and qualify internationally, and encourage others to accept as standards of best practice?

As for the proposition P4, although the use of the terminology 'Human Centric Model' and 'Passport Centric Model' has not been used by the participants, the distinction between a physical and digital world remains. 'Participant A stressed about

the advancement through digital transformation is the use of biometrics. And with that I mean both contactless and contact biometrics. So that there is still a virtual and physical element to our borders

Interesting are also the positions of both 'Participant G' who asserts that '*SMART and seamless border have both the same objective with the former struggling on security while the seamless border concept, it is much more for me related to travel facilitation*', and 'Participant H' who viewpoint is that

smart would be more in quantitative approach, and seamless more in a qualitative and passenger approach. So, [...] behind smart, we usually have some KPIs [...] what we want to achieve for instance in terms of throughput or though level of security detection etc. Whereas the seamless concept is usually much more used in public communications, and when we also address to the public, to passenger.

As for the proposition P5, INTERPOL as global repository of biometric information is well recognized by most of the participants such as ‘Participant D’ who claims for ‘*INTERPOL responsible for the biometric data*’ or ‘Participant E’ who highlights the issue with borders that ‘*haven’t got a clue about how they construct an arrangement whereby they could run biometrics against the biometric watchlist*’ and therefore call INTERPOL ‘*to fill this huge gap*’. ‘Participant F’ also warns about the technological difficulties ‘*of housing biometric data*’ that ‘*is more complicated*’.

As for the proposition P6, almost all the participants recognized that the implementation of a seamless travel process is challenged by the respect of fundamental rights such as ‘Participant F’ who acknowledges that ‘*if you’re profiling using biometrics, you’re entering a dangerous territory where you’re analysing and possibly abusing human rights*’. ‘Participant D’ also highlights how the issue is also on the side of the collaboration with the private, already recognized key for the functioning of the seamless travel experience

on the part of public private cooperation, that’s where we have a challenge because in Europe we are bound by the GDPR. So we can’t share all the data with private companies. That’s why we need a very solid authorisation metrics on who gets what data and for what use

The issue with the GDPR is also highlighted by ‘Participant A’ in relation with the collaboration with INTERPOL in data exchange, and the need to de-conflict those part of the INTERPOL Rules on the Processing of Data (RPD) and the EU GDPR (General Data Protection Rules) that are preventing a straightforward collaboration between INTERPOL and the EU as the

EU challenge INTERPOL as being in a common operating environments with not just RPD, but more importantly GDPR and other international data principles with regard to, not just the role of personal identification material, but the biometrics that sit with that as well

Another interesting viewpoint, still from ‘Participant A’, is

in the public policy setting and human rights, it’s the ethical use of all this sophisticated technology, to be used as an enabler or disabler of movement of people and goods.

Finally, as an attempt to downgrade this discussion, interesting is what indicated by ‘Participant E’ who reminds that individual wishes to leverage the advantages brought by the seamless process do it on a ‘*voluntary scheme because if it’s compulsory, people will complain about their data and their privacy.*’

As for the proposition P7, there is a general recognition about the use of DTC for the validation of the digital identity but the viewpoints of most of the participants is that the role of the physical check is still expected for quite a long time. ‘Participant G’ reminds that

ICAO is working on a seamless concept which is called the DTC [...] trying to make global governance for any new movement through a model which will have both the virtual token which can be on a smart device such but also continue to have the physical passport

but nevertheless concluding that *‘physical passport will still be there for, until the next 30 years’*.

Finally, interesting position for ‘Participant D’ who highlights that *‘as long as we don’t have that worldwide biometric database, there still need to check document authenticity, if it belongs to the person’*.

As for the proposition P8, this is aligned with the proposition P5, as long as is recognized the role of INTERPOL in managing integrated solution for biometric exchange is a logical consequence to affirm that INTERPOL could maintain a global repository of such as information as ‘Participant D’ claims *‘INTERPOL can really influence border integrity for a lot of member states by maintaining a biometric database’*. The same recommendations comes from ‘Participant F’ who urges for *‘biometrics in INTERPOL databases to be effective’*.

As for the proposition P9, although the concept is recognized by those like ‘Participant E’ who explains that

the principle is you will go through something like a seamless tunnel or you know a walk-through border where actually you are being recognised by facial recognition cameras as somebody who has already been approved. That is the seamless traveller journey concept that we’re now working

However the full operationalization of such walk-through is not in the viewpoint of ‘Participant F’ who *‘think there will always be a verification of the identity at the destination’*.

Finally, as for the proposition P10, the data accuracy is recognized a key element for ensuring the proper risk assessment and implement the seamless travel experience as also acknowledged by both ‘Participant A’ *‘seamless requires the current operating environment be maintained but improved with data more accuracy’* and ‘Participant E’ *‘if you can get data on people and goods for that matter which is accurate and you can do your risk assessment before those people or those goods arrive at your country’*. This matter is also considered a risky ground for INTERPOL that, according to ‘Participant A’, if wants

to be a serious player with integrity, it has to have its data depositary as accurate, relevant and efficient as possible and ensure its MSs' diligent contribution otherwise it would not be contributing to border integrity, but border dysfunctionality by complicating the operating environment with grainy and low-quality info.

This findings above permitted the author to provide results for each proposition. Below the table 4.9b which complete the table 4.9a.

Secondary Research Questions	Propositions [From theoretical Review]	Results
S3Q6: What are the different solutions implemented or that are subject of an existing evaluation study to balance facilitation and border security?	P1: Contactless Biometric Reader	Partially confirmed
S3Q7: How the different stakeholders from private companies (air airline operators, airport managers, security companies ...) and public sector (border controls, customs ...) are involved in the seamless approach?	P2: Extended collaboration to enhance public security while facilitating the movement of legitimate travellers	Confirmed
S3Q8: And how do you envisage INTERPOL collaboration with them?	P3: Foster the development of global policing standard and recommended practices for police/border enhanced collaboration	Controversial
S3Q9: What is the difference between the SMART border initiatives and the seamless border concept?	P4: Digital Identity Authentication ('Human Centric Model' vs 'Passport Centric Model')	Partially Confirmed
S3Q10: How INTERPOL capabilities is (can be) operationalized with seamless border?	P5: Integrated solution for biometric data exchange	Confirmed
S3Q11: What are the challenges for the new seamless concept?	P6: Full Respect of Fundamental Rights	Confirmed
S3Q12: Do you expect that we will get rid of passport in the coming years with authentication and identity management being completely performed through biometric information?	P7: The physical passport will be substituted by a digital one token-based (DTC)	Not confirmed
S3Q13: Do you think that the global INTERPOL role as repository of SLTD can be replicated with biometric information? Does the current technologies be enacted in a way to perform in seconds check '1 to n' so substituting the current 1 to 1 (biometric check against biometric in the passport)	P8: INTERPOL as repository of biometric data of unauthorized travellers	Confirmed
S3Q14: Do you think that the current ABC concept which include 1 to 1 biometric control, biographical check against databases and travel document authenticity control will be redesigned to operate differently?	P9: Walking through substitutes eGates physical barrier	Controversial
S3Q15: What are the risks that the future seamless border concept could bring?	P10: Data quality	Confirmed

Table 4.9b

The final stage of the data analysis was to narrow the focus by highlighting the most relevant emerged elements that refer to the seamless border concept.

The choice of the elements is based on the participants' endorsement (i.e., supported by at least 50 percent of the participants) and their link with the theoretical frame likewise the analysis conducted in the chapter 2.

The remaining elements are considered the most valuable findings for the seamless border, as set out in table 4.11. They are the need for extended collaboration, data quality, the role of the technology and in particular the need for de-conflict its use in the current operational setting, the limitations coming from the respect of data protection rules and, finally, the need to establish a dynamic relation among the new technology and the border officials that are operating in the same operational space.

Findings related to the expected position of INTERPOL in the seamless travel experience
INTERPOL to enhance its own relevance in the new border setting by embracing next-generation biometrics at border.
INTERPOL to raise its own relevance in the new border setting through broader access to data with interpretation in-house of that data leading to intelligence that could be disseminated to governments.
Extended collaboration with governments (possibly directly with individuals in the distant future) to obtain biometric data from the travellers who share their biometric information on a voluntary basis to decrease obstacles during the travel experience.
INTERPOL is recommended to enhance its data set to be more accurate and more relevant and efficient for border checks. It also must ensure that its member countries contribute data diligently for use in risk assessment of the passengers.
INTERPOL should participate in working groups that influence technology not yet operating in the current border environment due to the need of technical recalibration in the new border setting associated with a policy and legislative framework that permits its commencement.
INTERPOL and every country must incorporate human rights concepts into its biometric evolution.

Table 4.11

4.5 Conclusions

The analysis conducted in this research points the author towards a clear set of findings that are collated into a final table of overall findings set out in table 4.12 in the next page.

This is the finalisation of the data reduction process and offer a concise set of findings from which the research conclusions and recommendations can be based.

These findings are the basis for the conclusions and recommendations that are articulated in the next chapter.

Overall Findings
'Border integrity' is currently neither a recognized term nor standard in the common language but can be recognized as such once outlined by INTERPOL.
'Border integrity' is also seen as INTERPOL's terminology for marketing/outreach itself when trying to shape a new role in the border setting.
From an extended focus, 'border integrity' is a kind of 'border by design' concept overarching several border elements such as standard, process, technology, rules, risk, information-sharing, global integration, and collaboration.
From a narrow focus the 'border integrity' is a concept that embraces the security at borders (proof of identity in order to prevent illegal activity and detect threats) and the facilitation (proof of identity as a means to speed up the processing of trusted travelers).
INTERPOL facilitates global law enforcement cooperation through information exchange which ensures processing of travelers both during real time border control and pre-emptive risk analysis.
INTERPOL enhances collaboration between police and border authorities by developing a national standard operating procedures and policies that incorporate all law enforcement (including Customs in those countries that do not give police powers to Customs officers), transportation sector, and private security into one strategy.
INTERPOL continues the development of innovative database and technical interoperability with national border management systems.
INTERPOL to enhance its own relevance in the new border setting by embracing next-generation biometrics at border.
INTERPOL to raise its own relevance in the new border setting through broader access to data with interpretation in-house of that data leading to intelligence that could be disseminated to governments.
Extended collaboration with governments (possibly directly with individuals in the distant future) to obtain biometric data from the travellers who share their biometric information on a voluntary basis to decrease obstacles during the travel experience.
INTERPOL is recommended to enhance its data set to be more accurate and more relevant and efficient for border checks. It also must ensure that its member countries contribute data diligently for use in risk assessment of the passengers.
INTERPOL should participate in working groups that influence technology not yet operating in the current border environment due to the need of technical recalibration in the new border setting associated with a policy and legislative framework that permits its commencement.
INTERPOL and every country must incorporate human rights concepts into its biometric evolution.

Table 4.12

5. Conclusions and Recommendations

5.1 Introduction

5.1.1 The conclusion that emerged from the analysis

The aim of the research was to provide an insight into the processes and mechanisms implemented by INTERPOL to contribute globally to border integrity as well as the global perception of the Organization in the border setting.

INTERPOL itself appears somewhat comfortable in this environment as demonstrated by the inclusion of 'promoting border integrity worldwide' as policing goal number two of the organization and the setting of specific objectives for the achievement of its policing goal such as identifying criminal and victim travel; share information with and between border officials; contribute to the establishment of global standards for border security; and assist member countries with maintaining the integrity of their security documents (e.g. addressing the use of counterfeit/false passports).

However, the organization is now confronting a broadened demand for global assistance in making the borders more fluid due to the increased globalization around the world that has led to a mass movement of people, both legal and illegal, across borders.

The suggested response that helps in managing change is through technology. As we change, obviously, technology offers an incredible opportunity to meet the extreme challenges of enhancing security and passenger flow facilitation, and the current trend pushes towards the use of a digital identity with biometric components as keys for a secure and seamless travel experience.

However, from the analysis in this research it appears clear that the seamless travel experience is not going to erase all the previous problem elements characterizing the current border management approach. The main element, introduced by the paradigm shift in border management experienced in

the aftermath of 9/11, such as assessing traveler risk in advance rather than at the physical crossing of the border remain pertinent.

The expected change concerns the identifier as the traveler is no longer checking in the same way we do now but through the use of its digital traveler credential (DTC) with biometric information shared in advance in a secure environment with a governmental agency. Still the technology, through advanced contactless biometric readers, activates the seamless process at borders by double-checking the biometric information of the person against the one memorized in the DTC for match comparison and identity confirmation.

5.1.2 INTERPOL takes a stance in promoting border integrity

The first goal of the research was a better outline of the ‘border integrity’ concept, since INTERPOL does not define it. The ‘border integrity’ concept is not standardized and, in accordance with the literature review, there is no clear statement regarding the exact meaning of this concept. This is also confirmed by the reaction of the interview participants who were sometimes skeptical about its use and meaning. However, the research found that the INTERPOL statement is also considered in a positive way within the border community as a kind of ‘own terminology’ crafted for a better outreach in the border environment and the assumption of a clear stance and responsibilities in the border setting.

Nevertheless, the research indicates that this now requires the organization to speak loudly and clearly to better communicate externally and define a clear identity of the organization in border related matters. There is still much uncertainty as the four objectives linked with INTERPOL’s border strategic goal are not elaborated and are not reaching the border stakeholders who would be the immediate beneficiaries when using INTERPOL products.

It was also valuable to analyze the reactions of the participants when they were requested to provide their definition of ‘border integrity’. All of them were struggling for an interpretation, however none of them rejected outright that the terminology could not be of common use. Interesting is also the outcome of the response analysis, which showed that most of the participants espoused elements of the ‘whole-of-government’ theory without mentioning the theory itself, and for some, likely not knowing

the theory at all. The analysis also proved that from a more operational perspective the participants identified the INTERPOL's 'border integrity' concept with the 'integrated border management' one. Should these viewpoints be accepted this would give the INTERPOL concept a broader scope and meaning, joining a kind of 'border by design' concept that intends to design the border throughout all its elements in a way again ascribable to the 'whole-of-border' concept. It would also match one common terminology already used in a different context ('privacy by design' and 'security by design'). It would go beyond INTERPOL's narrow focus embracing only the four mentioned objectives but surely would extend to even more elements of the border integrity concept.

5.1.3 INTERPOL appears well positioned within the current border environment

It is generally recognized that throughout the last two decades INTERPOL has surely acquired its border management identity. This identity is twofold: on the one hand it is related to the member countries with a more robust border security capability when systematic checks of INTERPOL databases are performed. On the other hand, the capability to develop and implement capacity building initiatives as well as extend access to INTERPOL databases at the border of the countries of such initiatives is also a positive factor.

So, INTERPOL currently operates in a comfortable space with regard to its role responsibility and purpose. But still open questions remain regarding INTERPOL's deployment of its capabilities and communication strategy as most of the non-INTERPOL participants indicated that INTERPOL's engagement is principally focused on SLTD in the border environment, and its capability could be leveraged to greater heights.

In particular from the research it appeared clear that INTERPOL should uplift its relevance into the new border setting in twofold fashion, embracing next-generation biometrics at borders and reinforcing its capabilities to act as a global repository of police data as to engage itself with big data and analysis mechanisms for the production of criminal intelligence to be shared with border authorities. By doing that, border agencies could increase their capabilities to prevent and detect cross border crime during real time border control or pre-emptive risk analysis of the passengers through the assistance of INTERPOL.

Another important conclusion to be highlighted is INTERPOL's role in establishing stronger collaboration between border authorities and non-border law enforcement through enhanced criminal intelligence.

INTERPOL is also a recognized key player in developing innovative solutions to make border management systems interoperable with international and national databases.

5.1.4 The forthcoming challenges for INTERPOL to become an EU recognized partner by law

Finally, an important milestone for INTERPOL is the evolving relations with the European Union due to the changing EU border environment. The EU legislation for border management is developing massively and INTERPOL is one of the key partners according to the clear reference made in the EU legislation itself about the INTERPOL capabilities (databases and infrastructure) as additional layers for better securing the EU.

As a matter of examples, it is worthy to remember the Schengen Border Code²¹⁷ and the EU regulation proposal on establishing a framework for interoperability between EU information systems and INTERPOL²¹⁸. These legislative acts aim at ensuring that the INTERPOL SLTD database and the TDAWN service are automatically checked, through the centralised European Search Portal²¹⁹ (ESP), by the existing EU systems such as the Schengen Information System (SIS)²²⁰, which contains a broad spectrum of alerts on persons (refusals of entry or stay, EU arrest warrants, missing persons, judicial procedure assistance, discreet checks) and objects (including lost, stolen or invalidated identity or travel documents); the Eurodac system²²¹ with fingerprint data of asylum applicants and of third-

²¹⁷ Regulation (EU) 2016/399 of the European Parliament and of the Council of 9 March 2016 on a Union Code on the rules governing the movement of persons across borders (Schengen Borders Code).

²¹⁸ COM (2017) 793 final, Proposal for a regulation of the European Parliament and of the Council on establishing a framework for interoperability between EU information systems (borders and visa).

²¹⁹ Security Union: Commission delivers on interoperability of EU information systems, 2017, http://europa.eu/rapid/press-release_IP-17-1788_en.htm, (accessed 16 February 2019)

²²⁰ The scope of SIS is defined in three legal instruments: Regulation (EC) No 1987/2006 (Border control cooperation); Council Decision 2007/533/JHA (Law enforcement cooperation); Regulation (EC) No 1986/2006 (Cooperation on vehicle registration), https://ec.europa.eu/home-affairs/what-we-do/policies/borders-and-visas/schengen-information-system_en, (accessed 12 March 2019).

²²¹ Regulation (EU) 2013/603 of the European Parliament and of the Council of 26 June 2013 on the establishment of Eurodac for the comparison of fingerprints for the effective application of Regulation (EU) No 604/2013 establishing the criteria and mechanisms for determining the Member State responsible for examining an application for international

country nationals who have crossed the external borders irregularly or who are irregularly staying in a Member State; and the Visa Information System²²² (VIS) with data on short-stay visa holders.

At a later stage, the same interoperability is forecasted with the other three EU systems that are still in preparation or development such as the Entry/Exit System²²³ (EES), which has been adopted and will replace the current system of manual stamping of passports and will electronically register the name, type of travel document, biometrics and the date and place of entry and exit of third-country nationals visiting the Schengen area for a short stay; the proposed European Travel Information and Authorisation System²²⁴ (ETIAS), which once adopted would be a largely automated system that would gather and verify security-related information submitted by visa-free third-country nationals ahead of their travel to the Schengen area; and the European Criminal Records Information System for third-country nationals²²⁵ (ECRIS-TCN system), which once adopted would be an electronic system for exchanging information on previous convictions handed down against third-country nationals by criminal courts in the EU.

Furthermore, INTERPOL is being confronted with relevant challenges in order to reinforce its biometric capabilities which are now underused compared to the potentiality but this requires

protection lodged in one of the Member States by a third-country national or a stateless person and on requests for the comparison with Eurodac data by Member State' law enforcement authorities and Europol for law enforcement purposes, and amending Regulation (EU) No 1077/2011 establishing a European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice (recast), <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0603&from=FR>, (accessed 11 February 2019).

²²² Regulation (EC) 2008/767 of the European Parliament and of the Council of 9 July 2008 concerning the Visa Information System (VIS) and the exchange of data between Member States on short-stay visas (VIS Regulation), 2008, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:114517&from=HR>, (accessed 25 February 2019).

²²³ Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011, 2017, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R2226&from=EN>, (accessed 21 January 2019).

²²⁴ REGULATION (EU) 2018/1240 of the European Parliament and of the Council of 12 September 2018 establishing a European Travel Information and Authorisation System (ETIAS) and amending Regulations (EU) No 1077/2011, (EU) No 515/2014, (EU) 2016/399, (EU) 2016/1624 and (EU) 2017/2226, 2018, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1240&from=EN>, (accessed 15 December 2018).

²²⁵ Proposal for a Regulation of the European Parliament and of the Council establishing a centralised system for the identification of Member States holding conviction information on third country nationals and stateless persons (TCN) to supplement and support the European Criminal Records Information System (ECRIS-TCN system) and amending Regulation (EU) No 1077/2011 COM/2017/0344 final - 2017/0144 (COD), 2017, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017PC0344&from=EN>, (accessed 12 May 2019).

INTERPOL and the EU to negotiate a clear information sharing setting protocol and possibly legislation before new European passenger processing systems enter into force.

However, this collaboration is challenged by the GDPR regulatory framework that has been enacted in Europe in comparison with the existing INTERPOL Rules on the Processing of Data (RPD). The interview participants highlighted some concern regarding the European data holding being exposed through INTERPOL to third country nations.

5.1.5 Seamless

The utilization of digital identity is seen as a possible revolution for the cross-border movement of people, and particularly for the travel and tourism industry which is confronting rapid growth not only with the number of passengers but also in terms of contribution to national GDP that is going to bring money and jobs.

In this context, in collaboration with the information technology industry, they are proposing a paradigm shift for border management that keeping the same level of security would dramatically enhance facilitation and consequently passenger satisfaction.

The concept focuses on the use of a digital traveller credential, which will enable governments, in partnership with industry and passengers, to conduct pre-vetting risk assessment and security procedures to enhance the seamless flow of travellers through borders. This concept is founded on the principle that travellers generally wish to improve the quality of their journey by sharing personal information, including biometrics, for enabling border crossing seamlessly and therefore quickly.

Highlighted, in this context, is the need for a global governance for any new movement through a Digital Traveller Credential (DTC) model as well as the future need for a global repository of DTC with INTERPOL being considered as a candidate to host this global repository. It would be a paradigm shift for the organization to get data of trusted people within a police organization. Putting aside any further strategic, legal, operational, and technical factors, it would be interesting to think about the possibility for the criminal police organization to enhance global security through a better knowledge of trusted people.

According to IATA²²⁶ (2018) the majority of passengers (65%) are willing to share personal data for faster security and 45% are willing to replace their passports with biometric identification. Such biometric data if cross-matched with intelligence holdings by governmental authorities into a vetted setting would allow fast-track decision making. In the movement to the seamless concept, there is an important role played by the collaboration between government and travellers, moving from a passive relationship to an active one where travellers are requested to share on a voluntary basis personal information including their biometrics. In this scenario the role of 'trust' is one of the fundamental parts of this transformation: trust is today an 'Achilles Heel' for any new technology-driven transformation at the borders between agencies, the public, and industry.

Access to verified personal biometrics, biographic and historical travel data will enable entities along the way to undertake advanced risk assessment, verify travellers' identities and provide seamless access through biometric recognition technology. This requires that agencies conducting risk assessment are supported by high quality data including biographical and biometric police data of individuals with warrants of arrest or high quality data on stolen and lost travel documents.

However, the existing technology is possibly too advanced if compared to the current border architecture and its possible use is not easy and may be disruptive of the current border operating models and environments. This also entails the need for a policy and legislative framework that permits this to happen.

One of the most important challenges now is the data protection rules and particularly in Europe the public-private cooperation that is needed to operationalize the seamless process is constrained by the GDPR provisions. The current attempt is to build this relationship over a robust voluntary scheme through mechanisms which will leave to the individuals the choice of the freedom of being processed in compliance with seamless scenario or chose the current one that shall be kept also as a backup in case of technological failures.

Interesting is also the aspect related to the border officials who will be challenged by the machine and will be asked for important professional working changes to establish a dynamic relationship with the

²²⁶ Passengers Want More Information, Automation, Control & Privacy but Human Touch Still Important, 2018, <https://www.iata.org/pressroom/pr/Pages/2018-10-02-02.aspx> (accessed 30 April 2019).

technology. Border officials' working practices need to be recalibrated to make use of technology to enable them to be even more dynamic than they were in the past, not to be disqualified from their role.

5.1.6 Significance of the findings

Technology is surely changing the world and borders are also affected by the changes. However, border management is of utmost importance to the public as a national security risk mitigator.

Furthermore, the prospective seamless traveller journey will not remove some of the problems that we have currently. The challenges of reducing human trafficking, smuggling, and international movement of criminals, terrorists, and foreign terrorist fighters will likely remain because the seamless traveler journey can only detect the known threats. So it is important to highlight that by creating this seamless system, we are not going to completely defeat them, but rather limit cross-border movement for those bad actors who are known through a clarity of environment.

If the criminal is the proverbial needle in the haystack, the seamless traveller journey makes the haystack more transparent so law enforcement can easier find the needle in a haystack better controlled and regulated by means of the technology.

5.1.7 Implication for future research

This research was conducted within the guidelines of the Frontex EJMSBM. There were particular limitations for the research associated with timelines and the scale and scope of the research. As the author is a serving police officer the fact that the research was conducted on a part-time basis within the constraints of normal working time and duty roster was also a limiting factor. Nevertheless the topic was relevant and innovative and indeed appears not to have been attempted before.

Consequently, the author suggests that there may be significantly more scope for future researchers to go further with some hypothetical-testing themes such as how INTERPOL can provide support to the EU institutions on facilitating third countries to join the EU border regulatory framework under development.

A second interesting research theme could be the role of DTC, its global standardization, and the way this can be used by the European system (if it can be used) including the need for a global repository of DTC with INTERPOL being considered as a candidate to host such global repository. This research

would be a paradigm shift for the organization to get data of trusted people within a police organization that currently only holds criminal police information shared by its member countries with the purpose to enhance international police cooperation.

5.2 Recommendation

5.2.1 What INTERPOL should do

Based on identified findings from this research, there are a number of recommendations that can be considered by INTERPOL. It is recommended that INTERPOL undertakes a sustainable set of actions which will contribute to making its border model more viable.

Recommendation 1: The most urged recommendation is to better clarify its stance in the border environment through a clear self-definition of ‘border integrity’ which this research finds is not a common definition among border management executives and most likely not among border management operations either. This needs more explanation regarding the scope and scale through which the INTERPOL organization intends to accomplish its border initiatives and which partners will be supporting on that scale.

Recommendations 2: INTERPOL has also its well-developed forensic unit that is already supporting member countries in this regard. However it is still far from providing biometric databases to a systematic first line check today. For INTERPOL to uplift its relevance into a new border setting, embracing next-generation biometrics, it is really a key objective to acquire a significant relevance at borders and to be ready on a long term vision to address the challenges of the future.

Recommendation 3: Another recommendation for INTERPOL is to accept the challenges associated with managing passengers crossing the borders in a pre-emptive manner which require a reinforced risk analysis for allocating resources to those passengers who generate risk or potential risk. This requires INTERPOL to increase its relevance into a new border setting with broader access to data and

with the interpretation of that data leading to intelligence and analysis trends that could be exchanged with governments thus enhancing international security.

Recommendation 4: These research findings also indicate that INTERPOL is strongly recommended to have its data repository as accurate, relevant, and efficient as possible and ensure its member countries diligently contribute so that there is increased use of INTERPOL data for vetting.

Recommendation 5: it involves collaboration between non-border law enforcement and border agencies. This collaboration is always important and INTERPOL is in a global position as a collector of police and border intelligence for the further development of enhanced collaboration between them (guidelines, best practices, data sharing, trends, etc.) to foster a common understanding of how police and border agencies detect threats, identifying victims and the vulnerable and bringing them to places of safety.

Recommendation 6: In a technology setting, INTERPOL is recommended to continue guiding countries into using of best-in-class technology that identify threats, qualify identity, and importantly are able to be intelligent enough to automate systems and processes. INTERPOL could also unify the police operating model and environment at borders for industry (airlines and information technology companies) so as to deconstruct the challenges that industry has with interfacing all of these different countries that have different operating models and environments.

Recommendation 7: INTERPOL is also recommended to urge and participate in a global coalition to unify the police operating model through operational and technological global standards with other international partners for standards and recommended practices at borders (i.e., ISO, ICAO, UN, EU, etc.).

Recommendation 8: A better communication and outreach program is also recommended as too often the border management environment is missing a clear understanding of where INTERPOL fits in the border management picture.

In conclusion, the consideration and adoption of these recommendations should better position INTERPOL to support border integrity on a global scale and enable the INTERPOL organisation to deliver on its stated mandate as set out in its global policing goals to promote border integrity worldwide.

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7. Annex A

7.1 Letter of Introduction

Letter of Introduction
European Joint Master in Strategic Border Management (EJMSBM)

Research Title
How can INTERPOL contribute to future border integrity?

To: (PARTICIPANT)

From: Fabrizio Di Carlo
Specialized Officer
INTERPOL General Secretariat
200 Quai Charles de Gaulle, 69006 Lyon (France)
/ Mobile: +39 331 3694748 or +33 (0)6 17050166

Date: 25 February 2019

Dear [name/surname],

Let me begin with introducing myself. I am a Specialized Officer seconded from the Italian National Police at the General Secretariat of INTERPOL. I have been working closely with border management matters and also supporting externally the activities of the INTERPOL Border Management Task Force since 2012.

Since 2017, I have been enrolled in the Frontex's European Joint Master's for Strategic Border Management, an academic initiative of the European Border and Coast Guard Agency in collaboration with a consortium of six European Universities.

The aim of the master's programme is to support border and coast guard from national and international organisations in jointly managing border security challenges and enhancing cooperation and interoperability at the EU and international borders.

I have now reached the final phase of the programme, which entails writing a dissertation within the field of border management.

The research of my dissertation is to explore INTERPOL's contribution to border integrity through a case study that refers to both expected enhancement and use of innovative solutions for future border management (i.e., seamless concept, biometric technologies, pre-screening, risk-profile, etc.) and the role assigned to INTERPOL in recommendations, directives, and outcome from other international and regional organization and specialized working group (i.e., Communication from the Commission to

the European Parliament and the Council – ‘Stronger and Smarter Information Systems for Borders and Security’)²²⁷.

The main research question is: ‘*How can INTERPOL contribute to future border integrity?*’ The objective of this research is to identify how INTERPOL’s border elements can be operationalized within national and regional border programs so contributing to enhance global border integrity.

As an acknowledged expert in this field, I therefore kindly ask you to take part in an interview, which will provide me with valuable background knowledge crucial to completing my research. A list of questions is enclosed in the Annex I, ‘Interview Guide for Participants’.

Should you agree to participate in this program, please be informed that – with your permission – the interview will be audiotaped and further used only for the purpose of this research. The file and transcript of the interview will be deleted upon my graduation and handled in accordance with EU data protection rules. For further details, please see the Annex II, ‘Participant Consent Form’.

I know you have a busy schedule, so feel free to suggest a convenient time for this interview (via phone or Skype) preferably before mid-March 2019.

Please do not hesitate to contact me should you require further information. I look forward to hearing from you and thank you very much in advance.

Kind regards,
Fabrizio Di Carlo

Enclosed:

Annex I - Annex I, Interview Guide for Participants

Annex II – Participant Consent Form

²²⁷ COM (2016) 205 final.

7.2 Interview Guide for Participants

Annex I

Interview guide for Participants European Joint Master in Strategic Border Management (EJMSBM)

Research Title

How can INTERPOL contribute to future border integrity?

To: (PARTICIPANT)
From: Fabrizio Di Carlo
Specialized Officer
INTERPOL General Secretariat
200 Quai Charles de Gaulle, 69006 Lyon (France)
/ Mobile: +39 331 3694748 or +33 (0)6 17050166
Date: 25 February 2019

The interview will be conducted in a semi-structured format and as such the expected discussion is very flexible.

The purpose of the interview, alongside the other activities undertaken by the researcher, is to help in elaborating over the main question and related sub-question of the research as below.

Research Main Question

1. How can INTERPOL contribute to future border integrity?

Research Sub-Questions

2. What are the current INTERPOL capabilities that contribute to border integrity?
3. What are the innovative border management concepts (including technology) that can support border agencies to improve future border integrity?
 - 3.1 What new INTERPOL capabilities have to be developed to maximise the organization's contribution to future border integrity?

Finally, please find beneath a list of questions/arguments (divided into 3-main categories) that can be touched during the interview. This list is not exhaustive, however as the interview will be semi-structured, some of the questions below will not be necessarily discussed or formulated as below.

Interview Questions

Section 1 - Border Integrity Concept

1. What is your understanding of the 'Border Integrity' concept as per the INTERPOL global policing goal number 2?

Section 2 - INTERPOL Role on current Border Management

2. Based on your collaboration/experience with INTERPOL, what are the current INTERPOL border capabilities and what kind of contributions can they bring to border integrity?
3. Based on your collaboration/experience with INTERPOL, in what ways do you consider INTERPOL contributions most relevant to the concept 'European Integrated Border Management'?
4. What do you consider the main strategic priority areas to be leveraged by a national border authority (or international organization) that enters into cooperation with INTERPOL (e.g. policies, budget, capacity, training, cooperation, information sharing, technologies, etc.)?

5. Based on your experience, what were the main challenges in establishing/implementing stronger border collaboration between member states or international organizations and INTERPOL, both on the political, operational, and technological level?

Section 3 – INTERPOL and the future in border management (seamless concept)

6. What are the different solutions implemented or that are subject to an existing evaluation study to balance passenger flow facilitation and border security?
7. How are the different stakeholders from private companies (airlines, airport managers, security companies, etc.) and the public sector (border controls, customs, etc.) involved in the seamless approach?
8. And how do you envisage INTERPOL collaboration with them?
9. What is the difference between the SMART border initiatives and the seamless border concept?
10. How can INTERPOL capabilities be operationalized with seamless borders?
11. What are the challenges for the new seamless concept?
12. Do you expect that we will get rid of passports in the coming years with authentication and identity management being completely performed through biometric identifiers?
13. Do you think that the global INTERPOL role as repository of SLTD can be replicated with biometric information? Do the current technologies very quickly perform checks '1 to n' (with n being the entire content of biometric databases) so substituting the current 1 to 1 (biometric check against biometric in the passport)
14. Do you think that the current ABC concept which includes 1 to 1 biometric control, biographical check against databases, and travel document authenticity control will be redesigned to operate differently?

What are the risks that the future seamless border concept could bring?

7.3 Participation Consent Form

Annex II

Participant Consent Form European Joint Master in Strategic Border Management (EJMSBM)

Research Title How can INTERPOL contribute to future border integrity?

I hereby agree to participate in an interview in connection with research being conducted by Fabrizio Di Carlo. For the purpose of his research I hereby:

1. Confirm that I have read and understand the letter of introduction for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. Understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any adverse consequences.
3. Understand that this project has been reviewed by, and received ethics clearance through, the Academic Committee of the EJMSBM.
4. Consent the researcher to audiotape the interview.
5. Understand that the audio recordings may be quoted in the dissertation and used in research outputs but I will not be identified by name.
6. Understand who will have access to personal data provided, how the data will be stored and what will happen to the data at the end of the project.
7. Understand that the all the material gathered from my participation at this initiative as well as the conclusion of this particular research will be kept in a safe location by Fabrizio Di Carlo and that the material from the interview will be destroyed upon Fabrizio Di Carlo's graduation from the European Joint Master's in Strategic Border Management.
8. Understand how to raise a concern or make a complaint through the European Joint Master's in Strategic Border Management programme, at the European Border and Coast Guard Agency, Plac Europejski 6, 00-844 Warsaw, Poland, Tel. +48 22 205 9381, email .

_____	<u>dd / mm / yyyy</u>	_____
Name of Participant	Date	Signature
_____	<u>dd / mm / yyyy</u>	_____
Name of person taking consent	Date	Signature

8. Annex B

8.1. Transcription / Interview A

Interviewer:

My main research question is based on the contribution of INTERPOL in future border integrity. Why did this question come? Because a couple a years ago, you just left the organization when INTERPOL approved its goal for 2020: the 2020 United Nations Sustainable Goal. One of these is promote border integrity. I think for the first time that INTERPOL really stated in front of the globe that they wanted to do something for the border. This is very important so from that statement I started to think about this research. So, the first question: for you what is the main contribution of INTERPOL to future border integrity, and something that you could touch upon, what is for you the interpretation of border integrity? I have some problem to find a clear definition of border integrity in the literature. It is a little bit vague.

Interviewee:

Ok. So, I struggle to understand what INTERPOL means by the term ‘border integrity’. And I’m surprised as to why that has been selected as a title, because it’s not a common language in a border security environment. **So, I don’t know where they’ve drawn that labelling from. Because** How is it defining integrity? Is it all aspects of a common interpretation of integrity, or is it a more narrow focus of an interpretation of integrity? If it’s a more narrow focus, what aspect of that narrow approach is it that INTERPOL is trying to draw upon? And as a consequence, you with your assessment and your paper. Because I do find it very very vague. It’s not something - you know We can talk about system integrity within a border security setting. We can talk about official integrity. We can talk about policy framework that leads to integrity. But I struggle with this labelling of ‘border integrity’. Whereas everyone else in the globe is talking about border security. So why is INTERPOL starting a different and confused conversation, describing it as border integrity. I don’t know. So that’s my first interpretation **around this**. It’s not going to limit our discussion **Fabrizio about what I think** our roles, opportunities and purpose **and stuff**. But with the signposts you’ve given me as a headline, of border integrity, and the language that INTERPOL is seeking to use, it doesn’t bring an easy interpretation of what they’re trying to talk about for me. **They may think it does, but it doesn’t to me and for others**. It’s not talking to a security language, **it’s not talking to a systems language or an official operator’s language – So, I don’t know. You know it’s something** it’s new to me. Whether they’re trying to create a new role for **for their role** in a border setting, and that’s why they’re using this labelling, I don’t know.

Interviewer: That’s very clear, your answer because it’s exactly my difficulty to set the scene for Interpol. I started the first page of my dissertation considering the word integrity from the Oxford Dictionary. Integrity means something that is in its own wool. So, I think that INTERPOL wants to participate in all the elements of the border, but of course it’s something that is too much I think for an organization like Interpol.

Interviewee: And I don’t know if they’ve decided to draw from the sports integrity environment and used the labelling from that. But integrity in sport has a common understanding, in relation to the removal of corruption and the removal of doping. It’s commonly understood that those are areas that require attention to detail **and intervention**, and hence why it’s called integrity in sport. We have internationally recognized programs around that, with anti-doping and also with financial corruption. But to use that now within the border setting, I’m confused, why using that labelling when everyone else is talking about border security.

Interviewer: Another question is: based on your collaboration experience with Interpol, what are the current INTERPOL border capabilities and what kind of contributions can they bring on border integrity/security?

Interviewee: So, let’s start at the beginning. For me, we’ve got to start with INTERPOL – does it have a role, a purpose and a relevance in border security or border integrity? I think we can say with confidence that it does because it has established its identity, not just out of 9/11 with the creation of the Stolen and Lost Travel Document Database, but also it goes back further than that to its creation where it was about dealing with police and collaboration in international crime across borders. So, I think we can say that the institution has a role and a purpose with that collaboration. And its relevance has been reinforced in recent years with its sign postage through the United Nations, Security Council resolutions and others. So, I think INTERPOL operates in a comfortable space with regards to its role own responsibility and purpose **- which is quite good**. However, I still come back to the relevance aspect of it. How do we now uplift the relevance of it into a new setting? Because at the back, in current days, it was relying heavily on the use of SLTD, the primary data source of value to security. Secondly, it was in capacity-building and training giving some education to border officials on how to collaborate and share common operating practices and make use of SLTD amongst other national security documentation. So, are we to say that for the future, INTERPOL is going to be limited to its value in regard to just those 2 common capabilities from the past? And I would hope it’s not, and I don’t think necessarily that that’s **dictates** looking at what it’s trying to aspire to with embracing next-generation biometrics and a broader access to data and maybe interpretation of that data leading to intelligence and trends that could be fed out into governments or others. But it then comes down to scale and scope. And

that's where I always get nervous with Interpol, that we talk in grand terms but then struggle on scale and scope. The scope is not properly defined or clarified, but then that brings me back to the border integrity piece again: what is its ambition, what are the milestones it trying to achieve, and how does it scale for that with its limited investment and staff? And how does it then develop levers either into its member states or others, to support it in that scale?

Interviewer: I would like to focus more on what is happening in Europe now with the new concept of integrated border management. Because it's in this concept, there are several elements to take into consideration. It would be good to understand where INTERPOL can fit into one or more of these elements. Do you have any idea of what should be the role of INTERPOL in this context?

Interviewee: If we're focusing on Europe, I think it's an interesting region to challenge INTERPOL with regard to its role and relevance. The reason I say that is because it's such a developed environment, it's highly designed to be complementary to a more integrated approach because of the Schengen model and the European Council and Commission and the rest of it, so all the organs are there and have been developed over the last 40 years. And as a consequence, it's gone through self-calibration. So, we have Europol, Frontex, chambers with the governments and parliaments and others to facilitate interoperability. They're harvesting data, providing data analytics and moving to advanced border vetting and security protocols with ETIAS [11:30] and other systems. So, what additional value is INTERPOL going to provide into that environment other than possibly a facilitator for some enhanced data and access to the SLTD database? But there's a nervousness within that, because of the new GDPR regulatory framework that is coming into being from Europe. The European environment is nervous of its data holding being exposed to third country nations, and other independent data depositaries, of which INTERPOL is one of those. It would like to read data from them, but it doesn't necessarily want to disclose the return on that data because of the possibilities of infringements on the GDPR. So, as we're trying to move towards a more systematic, **interoperable** platform or operating environment, we're now being confronted with some policy challenges because of GDPR, but also as well some relevance challenges with regards to whether INTERPOL has an authoritative voice into the space? Probably not in the way that it might think it does because we've seen from the development of Frontex and others, that they're more than capable of self-developing. They're going to become a bigger data custodian than they have ever been. They will have a much bigger and more significant international holding of data than INTERPOL will have. That's for sure, with regards to all the international data it will have with regard to people crossing its borders internationally. So, INTERPOL is going to be confronted with a significant challenge once Europe does go live with its new integrated data architecture because it's going to probably outweigh some of the data holdings that INTERPOL has. I'm not saying that INTERPOL won't have a value to it, but I think it has the potential to become one of the most significant data depositaries for border security in the globe.

Interviewer: The next question is more focused on countries than on organizations, like the European Union in the previous question. What do you consider the main strategic priorities areas to be leveraged by national countries when they enter in cooperation with Interpol, in particular in the area of border security?

Interviewee: I think it remains the classics. There's 3 areas. There's 1 around policy and process. INTERPOL should continue to be a good adviser and guide on policy and process, so countries are supported where they want to be with developing the line of least resistance to achieving the goal of an integrated border security environment, so they don't undertake the pains of other countries or regions from the past, they can learn from the best practice so they can turbo charge some of their transformation.

The other part is with regard to the people. It should continue and broaden its capacity-building skills, so it brings elements of the globe together and, if we're talking about integrity, brings integrity to the training and the capacity of border officials to try and design out the corrupt or sub-optimal practices that the border officials are engaged in. And I think INTERPOL has often been quite good at fusing together the disparate agencies that rarely work together to actually come together in collaboration and operational training and events. So, I think that's good and if you think about a more common understanding of how-to police borders, how detect threats, how identifying victims and the vulnerable and bringing them to places of safety. And importantly, try and unify that operating environment for industry so that you are deconstructing the challenges that industry has with interfacing all of these different countries that have different operating models and environments. That doesn't mean you can't personalize the threat intelligence and the mechanisms that are used in the back office to identify those that you permit to come into a country and those that you don't. But you can bring a more efficient operating environment for industry, the airlines, technology companies, and others, to work within that reduces some of the cost burdens that they've got, never mind the tax burdens, which will bring an efficiency that we all know is an environment that is just going through exponential growth. Finally, in the technology setting, INTERPOL can have a role in guiding countries into using best-in-class technologies that identify threats, qualify identity, and importantly are able to be intelligent enough to automate systems and processes to ease the burden of the 'haystack and the needle' phenomenon. So, the haystack is controlled and regulated by the technology with an ease of operation and a confidence and trust that it is working well so that it then allows forensically the law enforcement agencies to focus on the needle, which is the threat within it, and deal with that very robustly.

Interviewer: Let me close the first introductory questions, related to Interpol. Still based on your experience, what were challenges on implanting stronger border collaboration between member states or international organizations and Interpol? So, you can range from political issues, technological and operations, and I would like to know from you what is the biggest problem for you that you have identified to cooperate better with the border authorities?

Interviewee: The biggest challenge across the whole landscape can be summed up in 1 word: trust. That's between governments inter-collaborating with their own organizations and agencies. It's trust between officials in the airports and at border control points. It's trust between the travelling public and the officials. It's trust between industry and governments to collaborate together in public and private partnerships. So, at the focal point of all of what needs to be done to optimize border security and bring about a better integrity to it, is trust.

Interviewer: Do you have some, not some solutions, but what should be done for you to improve this situation?

Interviewee: I think that we've left it to people to permit trust, and people by default with various biases and behavioral flaws, and history and all the rest of it, are still inhibited to trust. And I think as we're starting to move towards a new operating environment where we're automating processes, systems, information management, and importantly the use of

artificial intelligence and machine learning, that may actually start to deliver a new trust paradigm for us to make better use of.

Interviewer: So, do you think that new technologies will help to overcome this situation?

Interviewee: I think it's a possibility. However, there is going to be a cautious adoption of that technology. I'm seeing that now that I'm in industry: there is a cautiousness to its adoption. It needs to be qualified to be proven, that again it can be trusted to deliver on what everyone wants. And this doesn't mean that that technology needs to remove the human element. It shouldn't, it should enable human decision-making but do it in a routine way that people can start to develop confidence and know that they can trust the environment and hopefully work in that collaborative spirit rather than at the minute, where everyone wants to hold the data and prevent the data from being used. But the decisions are stopping progress and on the lack of trust and collaboration, the operating environment is preventing progress. So maybe the adoption of technology and the use of AI will loosen up some of those fears because they can have trust in the computer rather than in the people. And there can be better data visibility, so that everyone can see what the computer is saying rather than what the other agency, department or person is saying. So, there may be an opportunity in that for us to develop a new trust relationship.

Interviewer: I am still wondering that the machine must be fed by police data, and this is still a manual intervention that needs trust.

Interviewee: But it's really important to understand that those machines shouldn't just get fed with police and government data. They need to be fed as well with public and industry data. Because that's where AI will bring a better dividend and will improve the trust and the integrity in borders. So, what do I mean by that? I mean that as we're already experimenting with and going more into the production, is the empowerment of the citizen and the use of advanced biometric technology to allow greater confidence in people's identity management. In the past, and there still is, a complete fear on identity management. Because you're asking for a border official to be able to look at someone and interpret them against a printed document which is a passport. Now we're able to use biometrics and machines, which have a far higher accuracy rate than the border officials and removes the corruption element and fear factor of border officials and being corrupted by letting people that shouldn't be in etc., the machine is now able to bring trust and confidence in data in a different way. So, you need to broaden your outlook on data holding and data collection. So, when you start moving into some of these advanced technologies, they are only successful by the integration of data holdings from governments, the citizen, and industry.

Interviewer: When we enter to discuss about the difference between the current digital world, and the digital world of the future. I understand the big difference between the physical world at the border, which is passport-centric. While the expectation for the digital world, this will be more human-centric based on biometric information. Are you expecting that we are going to forget the use of passports, and we are going to concentrate on biometric information, to identify people? Or will there still be a big impact on the papers and the travel documents?

Interviewee: I don't think in the very near future that we are going to come away from the passport. And the reason for that is because it is still such a common identifier of nationality and identity management. And that's because the operating environment, and policy environment, hasn't got to a position of confidence, that it can remove the need for that document and allow an individual to just be the travelling representation of that nationality. And that means that you've got to make routine use of biometrics and have complete confidence in them that the biometrics work. But also, that if the biometrics don't work, how do you go back to confirming a person's identity? You're going to always need to come back to some sort of passport or national identity protocol. So, I think that the passport, for the short to medium term at least, is definitely here to stay and needs to be here to stay to maintain confidence and trust in border security and bring that integrity if you were to describe it that way. What can help is, the advancement through digital transformation is the use of biometrics. And with that I mean both contactless and contact biometrics. So that there is still a virtual and physical element to our borders. But what it means that in the use of those biometrics, you can have a higher degree of confidence in identification of passengers and individuals going through the border. You can allow for earlier continual and post interpretation of threat data, and vetting protocols and visa applications. And you can allow technology to enable what are very cramped and overcrowding operating environments to be optimized for the volumes that are confronting them now. So, you can reconfigure that operating environment to optimize every inch of floorspace, and building environmental space, to facilitate the traveler and the security requirements.

So, as one example in the US, where we are doing curb-to-gate, you do pre-enrolment and pre-registration before you get to the airport. You, as a passenger, are sharing your biometrics in advance with government and the airline industry. So when you get off, you use your face to get into the airport, drop your bag, confirm you're on the flight, walk through immigration, do your shopping purchases, get on the plane, get off at the other end, without having to get your passport out, your printed boarding pass and all the rest of it. So, you're optimizing the environment, where it's contactless and you just walk through. But there are physical elements to it, which are required if the identity doesn't match or you are concerned about the identity, you can discretely put controls in place, to divert that individual for more physical checks.

Interviewer: Do you think INTERPOL has its own role in this, because you say that there will be passports that will continue to maintain confidence and for when something goes wrong with digital identity about the verification of the person?

Interviewee: It does have a role to play. Let's go back to one of its primary purposes: The Stolen and Lost Travel Document Database. That operating environment needs to be maintained but improved with data accuracy. We've freckled with this for years, but if INTERPOL wants to be a serious player and present itself on board with integrity, it has to have its data depository as accurate as it possible can. And it has to ensure that the members that contribute to that data are going to be diligent, responding and keeping it up to date, but also supporting intervention where their questions on the data. There is no point putting data on there, not responding to the alerts or facilitating false positives. Because there's no integrity in that then. So, INTERPOL would not be contributing to border integrity, but border dysfunctionality. So, it needs to improve, and get that absolutely right. And secondly, is to turbocharge that data set, and start to embrace the role of biometrics. And so that means that when you're starting to talk about TDAWN, that the biometrics that are harvested off that of both finger and face, are captured and made available into the operating environment with the new biometric technologies, so that they can identify false identifies being used with biometrics of people which are attributed to TDAWN or whatever.

Interviewer: This is more a question not to Mick as the former director of Interpol, but to. It's more on the support of the machine, the support of the technology. I go with a case: at INTERPOL we fix all these questions with confidence and trust and so on. We start collecting biometric data: a lot of biometric data because member states want to use INTERPOL as a repository of biometric information, either finger prints and facial images. The machine would now support, during I don't know, a first-line border check or the moment a person is crossing the border control. Would the machine be able to compare the finger print or the facial image of a person to a set of thousand or million of data that could be stored at Interpol, or should we change completely the approach of INTERPOL from one unique database in Lyon with a different configuration?

Interviewee: There's two parts. First of all, can the technology be in a position to do the cross-matching of multimodal biometrics against a one-to-one or one-to-many? Yes, it can. Secondly, should INTERPOL configure itself as a central data hub or a facilitator. I think the way that some of the work that [...] has been doing recognizes that it has to be a bit of a hybrid environment. Some countries mightn't have sophisticated national depositaries and registers and want to import that data to a more technologically advanced setting and give the data to INTERPOL so that people can search it on their behalf. Others won't want to. And they will want to keep the data themselves, but they will permit searching through Interpol, through trusting partnerships with countries, on a B2B solution back to their data depositary and do a search on it. Others won't want it connected at all. So, you've got to have that hybrid environment that permits that. Whether you define that as a cloud, or edge computing, or whatever the case may be, it's all of that operating environment that has to be thought through and permitted. Now you've already got iterations of that with SLTD, TDAWN and others. You're in a common operating environments but what you do need to pay heed to is not just our own RPD, but more importantly, which I know [...] and the team are looking at in OLA, is the role of GDPR and other international data principles with regard to, not just the role of personal identification material, but the biometrics that sit with that as well.

Interviewer: Do you think that the current automated border control solution has been developed so far as means to authenticate the document control one-to-one and how biometric elements and check biographic data of the MRZ of travel document ... (37,25) ... Is this configuration still a valid configuration for the future, or do you think that we should move to another solution? Or maybe already the industries are thinking of new solutions?

Interviewee: Well industries are already thinking of new solutions because, at the moment some of the existing architecture, which is still quite advanced, is still quite disruptive to efficiency flows within borders. You still have these fixed configurations of gated environments where people walk up to a gate, stand to it, do some sort of biographical testing and then move through it. So that still brings pressure points on volume and flow. So, what the next generation is bringing about, which we're one of the leading companies in it, is the seamless approach. So, the channels are all open, you're just moving through seamlessly, because the camera can read you from afar: either your face; you can use remote finger-print scanning if you require it; you can use better contactless use of iris identification as well. So, you're starting to deconstruct some of the harder engineering of a gated approach that we're used to in the past. But that has to be enabled by a policy and legislative framework that permits that, where you don't have to have, for example, a physical intervention of a border official to do a spot check, qualify, approve and send through. This also means that you've got to mature the visa and the passport environment, where you're going to permit electronic tokens to act as visa stamps, entry and exit stamps. So, if you're going to move that, you're creating a digital passport and not a physical passport. You've then got to create an operating environment that can securely capture and store those. So that's why when you look at some of the work, I'm doing with the World Economic Forum and some other settings that we're working in, we're looking at the employment of blockchain technology, zero-knowledge proof and other methodologies that permit the irrefutable capture of these tokens. It should be done to an identity and allow for the portability of them to be shared throughout the traveler process. So, they go to governments, airlines, back-and-forth, to different vendors and the passenger themselves. And there can be absolute integrity and confidence within those tokens and data streams that are attributable within that depositary.

Interviewer: What you are illustrating to me now is something that, if I link to what you said before, it's not something that can happen tomorrow. This is something that will change completely all the process and procedural control. There won't be any more passport as a paper, but it will be maybe a token in the mobile or a token that accompanies the person when travelling. So still I am wondering now how INTERPOL can contribute to this future world. Because I think everything is in advance. If I have understood how it works, the passenger before travelling has to transmit its biometric data to the governmental institution that will manage that information. And after that, I can imagine that all this data is managed by Interpol. This is the situation that you think will be the future or you think about something different?
(42 09)

Interviewee: This is the future, and we've already got a tried-and-tested pilot that we're looking to stand up and test this year between the governments of [...] and [...]. We're already active and experimenting in this. So, coming back to the role of Interpol: how it connects these environments, and how it actually brings value to them and discusses with them. For example, at the minute, I started the journey in this space while I was at INTERPOL with the World Economic Forum. [...] is now doing some bits on it, but the relevance of what INTERPOL can offer to that community setting, which is being primarily led by industry, because they're trying to turbocharge delivering the efficiencies because governments are too slow, it's how INTERPOL develops itself to be more agile, informed and a more authoritative voice in that setting. At the minute, it's quite passive. So, if you're looking to recalibrate INTERPOL's role for the future, where are the key touchpoints it wants to be? The work that I've just discussed is one area of innovation that's moving very fast. INTERPOL is a member in its journey, and the Secretary General speaks every year at DAVOS around it, but how does it properly contribute to it other than being just a concerned or interested observer? And that comes down to its depth of talent and understanding. Is it producing white papers on it; is it getting into the field and testing some of the technology and methodology in an independent and impartial way? No, it's not, and it's some of those areas, coming back to the people, the process, and the technology elements. Is it active? No, it's not. Did we develop when we were recalibrating under 2020 within Interpol, a border security or border integrity directive? We didn't, and I asked them to, and they didn't. We went to serious organized crime, counter-terrorism, and cyber. And the biggest hold in that architecture was the lack of one for border. So, it was left to its own devices, but not even data analytics, but with data processing and playing with I-Check-It and others. So, if you're really going to recalibrate and prove INTERPOL's value to the border security setting, it's got to raise its game above

offering a bit of individual training to IBMTF, or a bit of data services to SLTD, and it's got to have a strength and depth to its capability. And that means having a proper recalibration, and properly embracing public-private partnerships, which is doesn't to date. That's where you're only going to get the connectivity with innovation. Because the innovation is happening within industry; it's not happening within government.

Interviewee: So, the answer is collaboration with industries which is taking care of border management and border security. Sorry, I missed one thing: you said that INTERPOL is already member of something?

Interviewee: World Economic Forum, no traveler digital identity.

Interviewer: Yes, because I don't know what is going on there.

Interviewee: So, it's in that group, which I got INTERPOL to be a member of back in 2014/15, and Harold, at the moment as director of OSA, he goes into it and represents INTERPOL on it. But it needs to be much stronger than that at times. We don't bring a lot to the table in offering, other than facilitation for some superficial insights. My advice to INTERPOL would be to recalibrate your own operating environment and opportunity to develop a more authoritative voice on behalf of policing and border security, than you have in the past. And that way you will have more relevance, and the opportunity to be a thought leader and an influencer in the direction of travel.

Interviewer: We have already discussed some of my questions, so I go back to automatic gates and the use of biometric information to identify people. Can you explain to me how you would operationalize the INTERPOL capabilities in these automatic gates?

Interviewee: Yes, well it's the same that you operationalize national intelligence data. So, it's about making sure that the biometrics are then pushed and pulled against different cross-matching environments to permit a threat interpretation and for things to progress, to be in the airport environment or to move onto flights. It's as simple as that in concept, the delivery is far more difficult because of the technology. So, you want an enabled environment, that has the most appropriate data, to cross-match against to identify risk. And INTERPOL has data holdings that contribute to that environment and should be used routinely. But it needs to improve those data holdings to make sure that they are more accurate, relevant and efficient.

Interviewer: So, the same concept we explained before about SLTD basically: the accuracy and relevance of the information.

Interviewee: Yes, exactly. For example, Mark, he has aspirations in the biometrics department to try and start making use of the facial imagery database into the border security setting. That's great but you've got to ensure that there is a high degree of consistency, and data quality in the image capture. Because you can't complicate the operating environment even more with grainy and poor-quality photographs that are going to lead to a whole plethora of bad-matching or false positives. And particularly in the use of these new technologies: if they're seen to be compromised because the inputted data leading to a series of false positives, they will be challenged and disqualified from use, in the way that we're seeing the facial recognition used in public settings by the police, there is a big fear factor that there will be biases or inappropriate use of those technologies or just poor matching leading to detention and removal of people's liberty in a border security setting. So, they will actually compound the situation, and make it even worse, on freedom and liberty and victimization, rather than enabling and protecting it.

Interviewer: I link the next question to what you said now. The role of the global standardization or (50,24) in this context. Because I think this is very much important, because it's not only question of the qualification of the data, the accuracy and the relevance, but it's also a question of using global standards and why there is a risk that we don't speak the same language and there could be some misunderstandings that effect the passengers basically. So, what is the role of the global standard and how INTERPOL can facilitate the recognition of global standards for police information.

Interviewee: So, is INTERPOL developing itself as a standards body? If it is, how is it doing that? It presents itself with standards in relation to NCBs but how well does it lease those standards? Very poorly. So, it's got to be careful in what it aspires to. So, if it's not going to evolve its own standards, what standards is it going to subscribe to support and qualify internationally, and encourage others to accept as standards of best practice? So, within that, are you looking at NIST standards, ISO standards, GDPR standards, other protocols out of the United Nations like ICAO? So, in the complex landscape, not every situation merit for example the ISO standard or the NISS standard. We still haven't got an international standard for facial recognition, or iris identification. They're industry capabilities that have involved various degrees of calibration. We have a general interpretation on what should be a minimal identification for finger-printing, borne out of judicial process. And the policing environment has helped to calibrate that. So where does INTERPOL want to position itself in that environment, in supporting qualification, standards, integrity and then moving beyond that, how does it guide the next generation of that regarding machines and AI? How do we make use and police those algorithms, to make sure there's not a bias or error in operating environment that leads to unintended consequences? Or maybe intended consequences, that are discrete and hidden, that serve a particular political or government interest. So, there's no integrity then in the use of those AI systems. And then finally, in the public policy setting and human rights, it's the ethical use of all this sophisticated technology, to be used as an enabler or disabler of movement of people and goods.

Interviewer: My questions one more, not on INTERPOL as let's say an organization generating standards but supporting the standards. For me, it's important that everything we do is aligned with international standards because this is the only way to promote the globalization of the standards and the use of harmonized data.

What we have discussed so far is based on the fact that we moved from one border, where everything is checked at the moment the person crosses the border, to a border where the person at the border has already been assessed. So, my question now is on the risk analysis to be done about the passengers. The first question is: what is already done to assist decision-making at the border? What is now the relation between the risk analysis unit and the border officials? There are already good relations, or something that should be increased, and what is the role of the machine in all of this?

Interviewee: That's a difficult one to answer at the moment, because it depends on the operating environment. Some countries like the US and evolving in certain parts of Europe and Singapore and elsewhere, and Australia, they have some very good collaboration because they have developed national targeting centers and fusion centers, which I think should be called out as best-in-class or optimal operational environments. There are many others that are completely dysfunctional, where government agencies don't collaborate. Classic example of that, which I was discussing with some police colleagues and border officials last week, is Hong Kong where none of the agencies share data so they are all left to self-create. And

they can't make important decisions. So, this can be improved by both policy and people coming together, with a common system architecture that permits the cross-matching of intelligence holdings into a vetted setting to allow decision-making and fast-track decision making. AI provides opportunities to improve and fast-track that to an even greater extent. But it's going to be slow to be adopted in many jurisdictions where they can't get over a policy and people operating environment.

Interviewer: Last question: do you see any risks that the future seamless border concept could bring?

Interviewee: Yes, there's going to be risks within that. We could end up developing an environment that is over-reliant on technology. It's one thing to move and embrace technology, but then as we see, there are other challenges that can come. There's going to be border control points where the technology isn't available, so how does that work? Like we're seeing with the migration crisis in the Mediterranean over the last 4 years. They're coming into ports or locations that the harder and more sophisticated technology architecture isn't established in. So, number 1, we need to have an agility and a mobility to it. Number 2, is what happens if the system goes down, because of a cyber-attack? It could become a single point of failure and needs to be recognized as part of a national critical infrastructure. So, you've got to evolve its sensibly that there's redundancy, but also that you can recover. And if you're having to recover, that probably means that you've got to then stand up back with the physical interventions. So, you don't want to switch off all of your old physical capabilities, because you might need to stand that back up again in the blink of the eye. Otherwise it looks like you've got closed borders, and we all know the problems which that presents. So, digital transformation brings great opportunity but needs to be carefully thought through to make sure that we're not exposing ourselves to unintended consequences and risk. Again, when we come back to INTERPOL's role, that is one that it could be doing some future-proofing: capabilities, systems, processes, to protect that critical environment but also maintain an agility and dynamic to the challenges of mass migration, national disaster, war, political and geopolitical disorder, that are always going to challenge the operating environment.

Interviewer: I was reading an article, a few days ago. Your first point was the overreliance on technology. The article emphasized the risk to disqualify border guards. So, if you rely too much on technology, the risk is that the role of the border guards will be disqualified. So, what is your thought? Should the border guards change their expertise? Do you see that there is a risk that the role of the border guards will be disqualified, and they may not be able to intervene in case of particular incidents? Or do you think that this is manageable with different training and practices that is implemented for them?

Interviewee: You have to maintain a dynamic relationship between the technology and the border official. It's not one or the other: they both have to operate in a coexistence. And the border official needs to be recalibrated so they become more of a digital warrior in the border security space. And they make use of technology to enable them to be even more dynamic than they were in the past, not to disqualify from their role and purpose and deskill them. By doing that, you design in a resilience to your border security that is optimized. So, if the system goes down, the border official understands how the system operates and hasn't lost his or her classic border security skills and can stand up and operate the environment back on paper if need be. But in the normal operating environment, where all the systems are working, they are now operating with an intelligence advantage. So as a consequence, your borders should be optimized and more effective to identify, detect and remove risk from being permitted to cross borders, and go into communities and environments to cause risk. And when we recognize as well that there is a seismic shift in indigenous populations, we'll all populations, moving into city structures, so urbanization. Everyone's wanting to live in cities, so to allow those environments to be dynamic, you want them to be well policed. You don't want them to be disrupted with unforeseen threats. And border security is a critical success factor in the screening of threat risk going into destabilize communities. So, we've got to qualify that the people element is a critical success factor here, not just technology on its own.

8.2. Transcription / Interview B

Let's start. So, what am I doing? I am doing a dissertation in Strategic Border Management, the Frontex Programme. The title of my dissertation is: 'How can INTERPOL contribute on future border integrity?'. The first question is about this integrity word: this is something that is giving me difficulties to find in the literature. Apparently, the wording used by Interpol, border integrity, is not very common. I am dedicating a couple of pages to try to define exactly what is border integrity, if there is a definition. I am very curious to listen from you, what is your idea of border integrity?

Interviewee: As you know, we use border management. If we want to make it even larger, we use integrated border management. So I also have some difficulties because border integrity in my perspective, but this could be linguistic or cultural limitations, narrows a little bit maybe more the concept. Although at the same time, to achieve border integrity, you might have to apply integrated border management. So you could eventually link that integrated border management and all these approaches and areas that are covered by integrated border management. This somehow leads you to the achievement of the integrity. I don't know if this helps a lot, but finally, what is border integrity? Is it that you manage to achieve a certain level of activities and layers which are included in the integrated border management? So, border integrity always starts beyond the border. And it's not that you are just safeguarding a physical line that is the border. So if you want to really get there, you could make a strong link with the integrated border management.

Interviewer: Some questions about Interpol, about what are your experiences with Interpol. The first question is about the current INTERPOL border capabilities. What are for you the capabilities that INTERPOL has now, and why INTERPOL can support, facilitate or contribute to worldwide security operating a border with border agencies?

Interviewee: As I mentioned before we started the interviews, I am not sure that I am fully aware of the full capabilities of INTERPOL in the border area. What I know for sure is that you work with the wider universe than the EU. So if I am now making a link with the EU and the work of Frontex, I could even the approach from the EU perspective and not just keep it for Frontex. But also for Europol, and other agencies that are working in different areas of security or even safety of the border. You work with the wider universe. So you have a potentiality of information for a start, that is very relevant for the external borders of the EU. And I know that we have challenges related to use and exchange this kind of information amongst different agencies and Interpol. But this is clearly a domain where INTERPOL can play a strong role in the security of the

borders. Then you have already systems in place: systems that have many years of use, that are well-known, that are kind-of already implemented, and here again I am talking about member states, but they are implemented worldwide and trusted. I know that we are using more and more your systems, which support very much to compliment the European systems with much wider information since you are actually working with this wider area in the world. So I think you can and you should play an important role together with European agencies, in ensuring the border integrity, if we want to use your word, of the EU external borders. There is still a lot of work to be done: we have serious legislative limitations. But I think what we are starting doing with the Fields Project is a good example on how we can cooperate. So we identify our limitations, we use our potentiality and I think sometimes by starting something like (05,50) Filts, at a certain point we might overcome some of the limitations by demonstrating that we can be better working together. And maybe at a certain point, the entities that are responsible for creating these legislations that limit us, become a little bit more flexible if they see that there is room for work without major risks to what they fear as some sort of threats. This is I think a good example that is still not fully there, and people are still not fully aware, and when it will come, I think it will be a major step forward.

Interviewer: Ok, that's very clear. Just because you said you are not fully aware of Interpol, that's not a problem. For me, it's important that you can see INTERPOL from your perspective: from the perspective of Frontex, the member state that can be Portugal or whatever, and the European Union in general. So that is the vision that I expect from this interview: not what INTERPOL does. And this is something that we already touched before, the elements: what you expect INTERPOL can provide in the concept of European integrated border management. We already started to discuss about IBM... We know about the 11 elements of the integrated border management. There is some elements that fit more or better with Interpol, some elements you think INTERPOL can play an important role for the European Union, for the security of the European Union. What are some elements, and what do you expect INTERPOL can do or improve? You say something already about collaboration.

Interviewee: Information exchange for sure. We still use this 'information is power', but for me information is power if you can share it and use it and put it together. Because otherwise, it is relatively low power because you only see part of the picture. So I think information is power if you really manage to share it and to compliment it with what the others can give to you. And I think here as well we have a limitation, is here is where we really have to work hard to see how we can kind-of overcome, and when I am thinking limitations, I am thinking about legislative but I am also thinking about structural. I think in the member states, things are still structured in a way that even at national level, what you are providing to the member state is not fully used by all the authorities. I have the concrete example of Portugal, where INTERPOL links directly with judiciary police. But then what kind of this information really reaches the border guards, national police, or the 'Guardia Nacional Republicana' so there is a lot of work still to be done in this area. I think even at an EU level now, we are more developed in this sense than at national level. So, there is a culture still to be built at national level. That if you don't work together, you will most likely fail in important moments.

Interviewer: So you see more the European Union in general as an entity and there is a need to change even more outside of Europe, or you see that this concept is more in member states now?

Interviewee: I think now it's more at an EU level, because we deal with the reality of member states on a daily basis and we still need to identify this difficulty to fully trust and share because of the fear of being weaker or distinguished. You know this fear of the national entities: if you give away what is your power, which is your unique competence and information, you might lose something and the others might gain and then you risk something. So I think there is still this feeling in many of the member states. I think that the EU should lead by giving the example. And give the example is putting the EU agencies of the area really seriously working together, and bring INTERPOL into the scenario at the same level. And, at least what I said related to the conditions and limitations that we have, as much as possible. We have a good example when we tried it in the hotspots, when we have all the systems integrated and being used at the same time and I know that INTERPOL didn't have the possibility to be there on a permanent basis, but this was the wish. And this is little bit playing by giving the example: that we are all there, and we want to work altogether with all of them and create a system where we cooperate together without major difficulties. By doing this, I am already touching the border control and the border checks etc. because if you are actually already developing this type of cooperation, you are already influencing very much all the other levels of the integrated border management. Training could be useful, and we are investing more and more, for instance border guards, as they are dealing with different types of cross-border criminology when they are operating in specific areas of the external border. They should be more aware that they can see things and detect things that are not normally in their skills and competences. We invest a lot with Europol on this, and I think INTERPOL could also play a role here with us in this identification of needs and developing specific skills and training. We talk very much now about terrorism and foreign terrorist fighters, and again we are raising the issues of those that might be returning to Europe etc. And I am sure that INTERPOL has information that can collect from different countries that the EU would have more limitations to get. How far we can cooperate here, this could make a big change in how efficient we could be in perceiving and preventing and detecting certain situations at the border.

Interviewer: So for you, the major limitation now is probably legislation.

Interviewee: We have very strong data protection legislation and we work with different universe of countries, even if all member states are members of Interpol.

Interviewer: Do you think INTERPOL could do something specific to, let's say, have rules recognised at EU level? I mean GDPF for instance. If INTERPOL gives itself with a specific regulation that is fully aligned with European Union rules on data protection and data sharing. Do you think that it could facilitate agreements, or the fact that we are not a European Union agency is something that from the beginning creates walls between the two ends?

Interviewee: Maybe it could be a good step. I don't know how far you could do it. Could you actually implement European standards and rules when you are dealing with the rest of the world? Is this actually feasible? I don't know.

Interviewer: If approved by the General Assembly, yes.

Interviewee: It could be a way, I don't know, the US could have probably different types of rules for the same thing. And if they would not be compatible, maybe you would have a problem. I don't know, I'm just thinking out loud. But definitely for the EU, yes this could be a step forward. And then as in every field of activity, in the area where we work, everything is very much about trust. And trust you build by working together. This is why I was giving the example of Fields.

And you have very much been working with Fields, and you know the strong oppositions we got from the very beginning because of the fear and the lack of trust. And I'm not sure if they are overcome, because basically we still don't have the system functioning. We still might face some challenges related to the trust, and we learned by when we started our joint operations, even if we are working with the member states of the EU when we are an EU agency, we gave very small steps to build the trust of the national authorities. And what we achieved and what we have now in place, I think it's quite unique, you achieve by giving little steps and building on that trust. So maybe this could be one step and then there would have to be some more concrete actions, more practical actions, that could help in building the trust of the member states. That they can rely when they are giving certain information that they are allowed to give to Interpol, there is no risk for them, there is no threat for them. I think maybe this is the biggest challenge to overcome: it's this trust thing that even if you have in your list of members, some countries that some member states may not share certain types of information with, you are actually using this information only to the extent that they would allow without any risks. This I think will be the most difficult thing to overcome.

Interviewer: This answer is making me think about the Portuguese situation. You know that INTERPOL historically is the national Interpol, is a branch of the judiciary police. And the case of Portugal is probably emblematic, because it's true that there is always difficulties in the national relation police/border. And it's not only Portugal in other member states, it's again at the national level, what should be done? Maybe together INTERPOL and Frontex, as representatives, INTERPOL representing NCBs and Frontex the border police, could we do something concrete to facilitate the dialogue between the agencies? What we should do, because here is not a question of creating European Union legislation, here is a question of creating trust. So, what do you think we can do as international and regional organisations to facilitate this dialogue?

Interviewer: I think, as I said before, small steps at a time. We are doing some small steps in other areas now with out coast guard and law enforcement unit for example. We are building bridges between border guards, police and customs. Slowly slowly, and I remember I've been working in this area now for many years. I remember when I started working for Frontex in Brussels, customs were completely rejecting any link or cooperation with Frontex. I remember that they had this working group in the Council, the Customs Cooperation Working Party, and it was very very difficult that we could even be invited for one single agenda point just to pass the message on how we would like to cooperate with them. It was extremely difficult, and one of the strongest arguments they were presenting is customs is the only authority that doesn't have an agency in the EU. So they had a fear that Frontex would, at a certain point, take over the customs services on board. It took us, I've been for 6 years now, so let's say 7 to 8 years to be really able at this point to have a kind of trustful cooperation to work with customs. And they are actually under the impact and the priorities of the impact, even colliding actions that we are leading, and this was quite unique for the past 2 years – that customs are sitting next to us and working together in 1 project, like the joint action days targeting some type of cross-border criminality. So it takes small steps. I think with Interpol, we can also work in this area. We started now, every recently, to engage with the judiciary polices, if you want to put it like this, so with police branches that are more linked to more types of criminality that we are not so much engaged with because our mandate is not giving us this possibility. We started just recently with a project where basically we don't want to be involved in the investigations because we don't have this competence, but we want to support investigative polices in preventing cross-border crime. And this we are starting now, we already had some small results because it's a small activity. And this is something that again we are doing with small steps because you need to build in trust, and they need to understand that we can cooperate, but they still don't need to share with us things that are linked to their specific investigations because we also don't need to have this information to cooperate with them. This is an area where at a certain point I could see...

Interviewer: This is a European Union level cooperation?

Interviewee: Not only, not only because we are engaging with Maoc-n. I cannot translate but this is an organisation that includes some EU member states and then US, some Central South American, and they are fully dedicated to fighting drug-trafficking.

Interviewer: So in this collaboration, if I have understood, the role of the border is to prevent...?

Interviewee: It's to be able to support the member states in this case, but in case engaging with an entity that goes already beyond the member state in preventing and detecting even beyond the border. Because that we can do. Then when it comes to the investigation as such, we cannot. But to support them in the area of preventing, and we have this pilot now in the Atlantic, so drugs coming through the Atlantic to Europe, and we are supporting and engaged in operations already dealing with this kind of activity. This could be one step to approach the border guard community and the coast guard community to the judiciary police, who are the ones that were still not engaged in our forms of cooperation by no means. Because, even when we created this multipurpose objective operations, who were involved? Everyone that had competencies at sea. Normally judiciary police, they had competencies at sea, but they don't work at sea so they are not in the coast guard area as such. They are kind of using the coast guard entities to achieve their objectives. So this is the first time we were engaging with this very particular type of police. And we are having our difficulties to our certain extent, but we are building one more bridge here.

Interviewer: So the role of Frontex in this collaboration is to, I don't know if I am using the right word, to supervise or lead the border authorities that is supporting the...

Interviewee: Not really, we go beyond. We are actually providing analytical products to judiciary polices. We have this fusion services on satellite imagery, fusion services, vessel tracking, so things that we can provide to these entities, and then we can with operations provide physical surveillance of specific targets. And we stop at the moment, when these vessels are apprehended. And we don't need to know what is triggering this request, because for sure it's an investigation with intelligence behind that can have months and even years of work. We don't want to know. We are just requested to support. We need intelligence information in this area, or we need vessel tracking of this particular vessel, or we need a satellite picture of this particular area, then we need an aircraft to follow this particular vessel. We need this or that equipment to use, to kind-of track and trace what it is doing. Or we need a surface asset to intervene. And this is where we support.

Interviewer: Because I am focussing on Interpol, do you see any role for Interpole, even the National Central Bureau to support information sharing or something like that? Or did you experience some activities performed by the Interpol, National INTERPOL Central Bureau, in previous operations or not so far?

Interviewee: For the time being, it's not visible. So I would say we are working together, engaging with Europol also for them to be part of this, but for the time being they are still not fully in. So we can share with them whatever, but at this point it should be, because they would be the ones entitled to know more about the investigation. But we don't know, so we cannot share with them what we don't know. What we can try by doing these steps, we can try to encourage the member states to engage with Europol or even INTERPOL and in your investigation as such, where we cannot step in. So this would be a compliment for what we are trying to do here: we deal it in a specific area without entering too much into the business. But there are agencies that can support you to enter more into the business, and here honestly speaking, I can only imagine that having members in your organisation that are on the other side of the Atlantic, and with whom you are working closely, this could only be an added value for the national authorities in the member states. But again, this is part of what I don't know and how are you engaging with them on this. And I will never know.

Interviewer: Yes, that's more a national process.

Interviewee: What I know for sure, because I was working at national level, is that we know very little of what you are doing with judiciary police. And sometimes when we are requested to cooperate because finally, we are at the borders.

Interviewer: There is not enough information?

Interviewee: We don't really understand what we are requested and it's an additional effort. I saw this in many member states. Providing information to Europol, or to INTERPOL in this case, or to INTERPOL via the judiciary police, requires for instance that the information is provided in the English language. And you have to understand why you need to do this effort at national level, especially in some member states where the English language at regional level is not still so much implemented in the law enforcement/ border guard community. I remember that we were having this thing some time ago in some of the member states, that some information could actually be shared even with Europol. But border guards need to understand why it is important to share this information with Europol or with Interpol. Otherwise why would they even make the effort? And then nothing comes backwards. One of the things that I am permanently requesting is that we are in this first line. This is the place where we can detect lots of things. But if we don't get from agencies like INTERPOL or Europol a little bit more targeted information. It doesn't have to be personal data, or confidential investigation data, but I am asking this even to Europol many times. We are there. Whatever we are detecting, we are trying to follow some guidelines that we have that this could be a person of interest. Because we have these kind of general guidelines. But we never have tailored guidelines. Something like in this moment of time, you should focus more on this or that. We are always using the same static common risk indicators, as they call it. They are there for 3 years now, they are totally static. Are they actually still good? We need something more tailored, because this trend changes constantly. And if we don't give to the border guards a little bit more detail on what the hell they are looking for, they will still be using this generic approach. Then you have two consequences. When you have something that is very static in place, at a certain point, you tend to disregard it because it seems like it is something that is not very useful. It is something that is not evolving, probably didn't bring many results. It's just the same thing: general rules that you have to apply and automatize, and at a certain point you don't pay so much attention any more. If you come with fresh things every now and then, because the trends are changing and because the situation in the world is changing, because now border guards: 'please, you should focus on this or that'. Like we do with the migratory flows, or at least we try to do with the migratory flows: targeting types of targets.

Interviewer: This is very interesting. And who created these general guidelines for these risk profile?

Interviewee: These risk profiles are very specific for foreign terrorist fighters. It was developed 3 years ago somehow by the commission and then Europol and Frontex contributing. And then it was there. And this is how you profile a foreign terrorist fighter. But when you are at the border, you need to understand because the trends change, the modus operandi change. What is now the trend? These people are trying to come by sea, air or land? Are they trying to use their EU passports, and pass as tourists? Things change in this area and we are still using this kind of page that they might have erased their beard recently or whatever.

Interviewer: These general guidelines are developed at European Union level and shared with other border authorities in Europe.

Interviewee: I'm not sure if it's true.

Interviewer: You say that it's static because it's already 2 or 3 years and it has never changed. But do you think that the member states, the border authorities of the member states, adapt themselves to new situations maybe unilaterally?

Interviewee: I'm not so sure because it depends on how they are structured and organised. Again, if I take the model of Portugal, I would say no. And if I take the model where different authorities are working with Europol and Interpol. Because normally you have the same stakeholder which is almost never the one that is at the border, or the one that is performing the coast-guarding.

Interviewer: Yes, it is already another entity. We say that at the beginning.

Interviewee: And into the extent that this doesn't work at national level, and bearing in mind that between Frontex and other agencies, this is not developed enough that we can at least use it in our join-up operations. Because it is not. Then I would say no, they are not adapting. Not into this specific type of threat.

For example, migratory flows. Which routes are the Afghans now using to reach Europe? This is part of the analysis Frontex does. This we provide frequently because we have briefings with our de-briefers and staff on the field. And we are telling them: this is now the trend, they are now coming more or less this way, this is coming from our de-briefing activities, so we know that this is changing now a little bit like this and that. But, other types of cross-border criminality we can detect. We don't have that much, including the terrorists. How many are now detained in Syria, Iraq and Turkey? I think even the EU doesn't really know for sure. These ones are detained, at least this is what we know. The member states might accept or not. Ok, where are the others? And do we actually know if they want to return? How they want to return? Are they using the legal ways to return? Are the others trying to use other ways? Are the hotspots areas that are promoting radicalisation because people stay there for such a long time, and who is in fact taking a look into this? And what about these places where they are arrested out there? There is so much information about this that for sure Europol has judiciary policies into a certain more limited scope has, that could be used in a more general way by border guards. We don't need to know who is exactly the guy arrested in Syria. But we should know at least where are the focus where they are now radicalising people? Where are these nuclears being built still here and there? How are they trying to get to Europe? What kind of Europe,

what kind of document fraud or not? If we are smarter on this, then you can actually target better. Because if you are just profiling as usual, at a certain point you miss a lot of these things. And they know what we are profiling. They know what we know.

This I think is one of the big gaps. The US could be a good example for this, when they had the attacks of 9/11 and things like this. Everyone had information but finally no one shared with anybody. I don't know if they currently share, at least they created the structures to share. Are they actually sharing or not? We don't know. This is a good example of how you can have all the information you need, but still disaster can happen because you were not capable to identify what is relevant and what the others should know about what is relevant. Who is dedicating a minute of time to think this kind of information is absolutely for the border guards, or the judiciary police?

Interviewer: I want to move now in the future concept of border that is pushed: the concept of seamless. There is now this concept that is pushed by private industries. There is the World Economic Forum trying to find a better solution for travellers. This is linked to the fact they expect a big increase in travellers in the next years, and the infrastructure will not grow at the same level. So they extended the use of biometry, of technology. These possibilities will go a little bit beyond the smart border concept that we have developed in the past years. What is your general impression about these methodology, this concept that is already under elaboration?

Interviewee: I don't know very much in detail. I think whatever technology can bring to facilitate the bona fide passengers to transit without too many complications. I've been defending this since the very moment we developed the automated border system in Portugal, and you know that it was quite innovative. So one we implemented the rapid, my thoughts were always if you can channel the trusted passengers through automated systems, you can focus on what is important to do in the border lines and checks. Because you can focus on the universe which is much smaller of people that really need to have a serious border check. SO I am very much in favour in whatever technologies we might develop, that are trustful enough, that facilitate work at the border guards and that they can focus where they need to focus instead of being there and doing all the bona fide by doing the same procedures that finally they are applying to all the others. So this obviously requires again a lot of work which starts beyond the border, because it's proven also the system checks what it checks, but maybe in the future with this artificial intelligence you can develop systems that can go a little bit beyond checking security features, like biometric features and things like this. This might come faster than we can imagine, but for the time being the human factor is very important. But for now, the human factor should focus on what is important and not... because there is no country that will be able to develop infrastructure and invest in human resources in enough quantity, to replace technological solutions for the bona fide You cannot aspire to have the traditional control with the growth that you just mentioned. For me, I think this is the future.

Interviewer: The use of technology in the seamless concept. I would say, according to the studies that I have done so far, technology already exists. Now we have to enact these technologies to use. What should a border agency do to permit this technology to be enacted for border control? Because we already have a system that is able to recognise face, or to see for your fingerprints, all the biometric checks. We have solutions for advanced risk analysis. So I don't see big differences between the concept today, because it's pre-emptive already. People already know, that tomorrow they will travel. There is the use of social media. According to me, there is no big changes in the methodologies that will be used. It is just a question of different technologies. Do you see that border agencies redesign their processes and standard operational procedures, or do you think that the use of the machine can just arrive at the border and start to be used?

Interviewee: Well for sure they will have to change something on the model. I don't know what are the new technologies that are still being developed. I know what is there and what you can still do with what is there. Let's face it, we use it in a very limited way still. But there is the potential to use it in a much broader way. This is where the agencies need to change their model, if you want to start using even what is already there even in a broader way. Finally we never implemented this programme that is discussed in the EU that I don't remember now, for more than 10 years, of having... there was this trust traveller programme that people from third countries could do this sort of pre-clearance in the embassies and then use the automated systems upon arrival. Finally, I don't see that these systems are there. So I think there is something still to be changed if we want. Because who is the trusted travellers at this point? Is it the EU nationals? Otherwise is it the third country nationals, no matter how many risks they present or not, they are still not there. So you need to change the models that you have in place. You might have to invest more abroad if you want to have something easier upon arrival. I cannot imagine for the time being, the automated systems that could replace completely even if you have P and R. But then again you still don't have all the databases connected, you still cannot put the systems consulting all the relevant information. You are still just checking partially when you are using even this P and R. At the end there is still some role for somehow preparing before what you could facilitate upon arrival. But maybe in the near future, this can change.

Interviewer: So it is not probably a question of redesigning the process of the border guards, but also the interpretability packages, access to the databases, legislation...

Interviewee: And here again, you go to the intelligence corporation. If you want to create this new interoperability between the databases, you have to link more than what you can have finally access now already. We are just making it easier for the border guards. Because finally if they enter into 3 or 4 systems, they have all the information. But if they have to enter 3 or 4 systems it's not feasible. So we are facilitating but why don't we put more there. Then we will have the entry/exit, but INTERPOL databases should be there as a basic rule. I think now it's there in the package. But also the ways of doing things, they need to change in the future. You cannot develop all these things, and then continue to do the same type of border control.

Don't ask me what model, because this would require a little bit more work. But there is for sure a model that should be facilitated.

Interviewer: We see interest by the European agencies and national border authorities in exploiting biometric solutions, or do you think that today there is no big interest in chasing the advanced technology?

Interviewee: I think there is the interest but there is always mixed feelings. Because on one hand, the more you develop the technological solutions, the better it is for the travellers and the development of economic tourism. And then you have to deal with the human factor, which is quite interesting and different. Then you have the unions and the staff, because they see this as a threat to their work, to their jobs. Again, we always go back to the question of trust.

Interviewer: Here we also enter into the domain of the change environment.

Interviewee: Which is extremely difficult when you want to change management, even when you are not changing so much. You already face the human resistance which is a natural thing. If at a certain point you start seeing that robots are replacing humans already in services in some countries, that by nature you could not imagine being done by a robot, then you enter this human factor which is the strong resistance to enable the introduction of more developed technology. This is a kind of balance that it is difficult to keep. It is difficult to strive for. This could be one of the major blockages to introduce, for instance, artificial intelligence in border control. The biggest opposition you will get from the community.

Interviewer: We focus on the European area: the fact of using the same rules and process. What is for you the role of the standardisation and harmonisation of data at global level? Because I think that, what is very much important, is that internationally and globally we can use the same concepts and processes? The harmonised data, because otherwise we use 2 different speed – one in Europe and one outside of Europe. Different concepts, and we are going to lose a lot of information probably. What is your idea and how could the European Union lead a perspective that is global in harmonisation and standardisation of data and process?

Interviewee: This is an area where I don't have much hope. The levels of development are so different. I remember, I used to participate in ICAO panels on revision of annexe 9 and the security 1 16 or whatever. And then you were in this huge auditorium with all the nations sitting there, all the ones that belong to ICAO which is basically almost all the world.

Interviewer: It's European Union, err United Nations.

Interviewee: And then you have these blocs. You have South and Central American Bloc, African Bloc, and Eu there is really small thing. Even US there is small thing. Because when African communities start talking, they talk in one voice in this forum. When South and Central America talk, they talk in one voice which is very interesting to see. And if I think that then we were discussing the year for obligatory introduction of the biometric, no it was not even the biometric, it was still the machine readable zone.

Interviewer: And still there are countries that do not use them.

Interviewee: We were discussing this, and Brazil was taking the floor on behalf of Central and South America, and saying: never before, I don't even remember which year.

Interviewer: 2016, I know very well.

Interviewee: And then EU and US etc. were there saying no no no, it has to be in the next 5 years. The reality is so different. You can standardise in some regions, but you cannot even consider standardising globally. It's simply not feasible.

8.3. Transcription / Interview C

Interviewer:

Interviewee: I have been 23 years an intelligence officer, and I am really an analyst. You are going to be talking to an analyst who became the manager of research and innovation. My expertise right now is management.

Interviewer: It's good because I would like to keep the level of this thesis at high level in terms of vision and strategy. Also, because we are talking about the future. At the beginning, we will see what is the current situation. In the second part we will talk about the future, about something which is in the outlook that is not concrete things for border management. So, I have to stay at high level.

Interviewee: And I will tell you when I cannot respond.

Interviewer: Ok, let's start. I give to you this list of questions, but we are going in a very flexible way. What is very much important for me, I want to introduce why I am elaborating on this topic. Because Interpol, a couple of years ago, developed its policy goals, 7 policy goals, and one of these goals was to promote global border integrity. And something which is interesting, I am asking to all the interviews, is that I did not find a clear definition of the term border integrity. So, I am wondering, and trying to identify with my professor, what is the interpretation that INTERPOL wanted to give. But this is my job. In order to do it, I need to know what is your idea of border integrity. Because it is something that is not common used. Have you ever heard about border integrity, and what is for you border integrity?

Interviewee: I agree with you, it is not a term which is used as a standard when defining the concept of border management or border security or defining the goals of the activities or the vision or strategies of border management or related to border security. I have seen, also in my professional life, something similar they called 'integrity of borders' but not 'border integrity'. But I am pretty sure, having read your question, that integrity of borders is not border integrity. Integrity of borders was referred often as country corruption. So, integrity as a value of the border guard or the customs officer, in terms of professional honesty. So not accepting bribes, so moral integrity in that sense, moral professional integrity. So, in that sense I have seen often the terms we were using when I was working in Bulgaria which was the place where I was working. Integrity was exactly the word we were using. But that you see is a completely different meaning to the one that INTERPOL wanted to give. But I think I understand whomever wrote the vision or goals of Interpol, what they were trying to mean. Integrity is also used, a similar word, in the very famous integrated border management. And in defining integrated border management, there is so much literature and professional and academic work behind. You see that the effort has been placed always in trying to understand what border management was. But it was very much on 'integrated', where the difficulty of that definition was. What does integrated mean, and that was too difficult and left aside. I am going to link this afterwards with integrity, or border integrity. I think that was like, if I am trying to understand the marketing aspect of Interpol, they tried to find something that might look different to a similar problem which was integrated border management, let's call it border integrity. So, the word that I am trying to define, I was saying, integrated in the integrated border management acronym, the IBM acronym, was very loose over time. Some people and some member states were talking about integrated means, and different authorities working together. Inter-agency cooperation at different levels. The international aspect of border management, together with different authorities working together. And also, the internal aspect within the common space in terms of Europe. The cooperation between the member states that form part of the common

space. So, a tactical level, integrated meant those that were exercising executive powers in a border section should work together in an integrated manner. Be more than coordinated, not just coordinated. At the end, for me, and this is my personal view and I've written about it, integrated is three layers of cooperation that can be clearly distinguished based on a clear agreement between the different actors in the border management area. I do an emphasis here. Border management is geographical but also a legal concept. It's a process concept also, in terms of legal obligations. So, the border is not only a physical location, it's also a procedural location and gives you legal opportunities and also you have legal obligations in that location. So, in that location, at tactical level, I was saying again, there are 3 levels of integration or integrated. The basic level is when different authorities are working together in that border management area, be it border crossing point or between border crossing points. The basic level is when they coordinate: they inform each other of the plans, activities. They could even agree to do some joint patrolling activities, even to share some types of information. The second level is much more sophisticated, which is the level that we are agreeing to. We agree that you do this part and I do this. So, we address in an integrated manner with a partial integration, the border management. So, we agree that I will not do something that initially part of my mandate but is part of your mandate. You do that, I do this. And the third level of integrity, it's the level of integration. It's when the different authorities come together, as a unique corpus. There can be many modalities to that, but there is an integration between the different authorities working there. They do things together, and they do everything together or a number of things together. And they only separate to perform what is in their separate mandate. But the rest, they work as a unique entity. So, this could be a concept of border integrity, these three levels, to finalise. For us, it's clearly different. And that's why there is a merit and a sense of us talking about integrated border management or border integrity or member states or many more, and you have a multi geographical areas and complexities. We work for a common space, which is a single area. We have EU common borders which are member states managed, but with a clear EU policy behind. So, our main goal is to make the management of the borders extremely solid. And that's where integrity applies to us. We're integrated, so it needs to be a level of performance. But the objective, this is just a mean. It's just a mean, because border management is a mean to achieve what the final goal of the treaties is which we leave in a common area of security, of free movement. A condition which is only met if we guarantee that borders are managed to the highest level of security possible. And that's really integrity of the borders. The highest management of the borders to allow the freedom of movement and the security of everyone that lives in the common space. So, at European level I will tell you the definition very clearly. At INTERPOL level, it might be a bit different.

Interviewer: It's important for me to understand what is your interpretation of integrity. Ok. Now the first questions are Interpol-related, so it might not be very well known by you. But it is important that you can reply to the question and see from the perspective of your organisation, the European Union. And the first question is based on your collaboration experience with Interpol: what are the current capabilities that INTERPOL has delivered at border, and integrated within, let's say, the national or European border mechanism? Do you have an idea, or what do you think can be?

Interviewee: I have no idea. I do have idea, I am exaggerating. But I am sure you will find experts who know much more stuff about INTERPOL's capabilities and how they can contribute to your concept of border integrity. What I can tell you is that we are very keen, I am personally very keen to engage Frontex research and innovation, which is the European research and innovation in relation to border security with Interpol. And I am looking now at the calendar, and any opportunity that could bring me to what I know are the developing capabilities of INTERPOL in innovation. So, as I understand, there's [...] I was talking to her, that there was a project that has been developed in the past few years to develop the innovation capabilities of INTERPOL and the member states that could develop a concept that they could deliver to your member state. There is a centre, I think in Singapore, that recently 1 year ago, no 2 or 3, that was launched and that I don't know in detail what is the goal or what is the vision behind the centre. And especially for me, it would be very interesting.

Interviewer: So, you don't have any contact with them?

Interviewee: No

Interviewer: But you think it would be good?

Interviewee: Yes, it's critical to understand how innovation is offered by a law enforcement international organisation like Interpol. So, I need to understand what you are offering as a concept of innovation and research, the tools you use, also the way member states perceive that. That would be really interesting for me.

Interviewer: Based on your experience, what kind of... let's imagine that INTERPOL has nothing, it has a group of people working in this new innovation environment, in an office, a unit or whatever it is. What would you expect them to undertake as activity that tomorrow can be useful for you, for Frontex, for the security of Europe, not only Europe but generally the security of the global? But of course, linked with border security.

Interviewee: What I would expect is that INTERPOL looks at itself to try to deliver a concept of research and innovation that is practical for Europol member states. Because then it will be practical for us. Not only because we share member states, but also because the interaction with the member states that are not Frontex member states, in terms of operational cooperation, but also the understanding of the research and the state of the national conditions related to technology, is really going to be affecting us enormously. So, I would expect that INTERPOL is helping the member states to, for instance, to close the gap that there might be between the technologies that are available to them and the ones that we are developing or using already or researching at European level. I will use the example of the entry & exit system, there could be many. If we at European level are developing an entry and exit system that relies on a system, and technical solutions on acquisition of biometrics, on processing the amounts of information on mobile devices that collect biometric information, all of that in a seamless way at airports. If we don't have a system that can talk to our system in the third countries from where people are flying to us, then we have a problem. We are the factor excluding half of the world. If there is no technological development that is helping those potential travellers to fly for business or tourism to the European Union, that will be a problem for us, and it will be a problem for them. So, the border management side should be made available. But the border security side should be available likewise. If you don't have systems where there are detection capabilities being researched, innovated and incorporated into the departure points, then we have all the pressure in the management of our borders and that's going to fail. That's going to fail. Because the moment that the pressure is very high, you know that you begin to balance other priorities like you need to allow people going in. If the border crossing point is blocked by enormous queues, people decide not to go to border crossing point. They fly somewhere else. That has economic

consequences. So, all of that cannot happen. So, you need to lower your level of attention to detections of risks, or suspects of persons of interest in general. And all that is not good. That's when the whole border continuum is not working, and that cannot happen. So, a technological gap, that is not avoided through research technological research and innovation, has the potential of causing this disaster. So, I would expect that you work on that. Of course, we can work. The EU will work on making the potential places of departure be prepared, but we will not be able to do it alone. It's important that we have interaction with Interpol, where you are present. For sure in the law enforcement part, on the security side. That will be quite critical.

Interviewer: Ok, let's try to narrow the possibilities of Interpol. The next question is the role of INTERPOL in the new integrated border management concept of the European Union. These consider 11 elements, and I am wondering where INTERPOL could, let's say, be beneficial for the European Union. In which of these elements? It would be very interesting to understand in this IBM concept, where the role of INTERPOL can be beneficial for the European Union, if you have any idea?

Interviewee: The capabilities of the member states without any doubt, the technological readiness, the ability of those member states of non-EU partners to analyse their own data and try to detect and disrupt as many unlawful activities before we are confronted with them. To liaise with us, in terms of operational investigations. You know, I think INTERPOL is super important to try to close the cycle of investigations which is not closed very often. So, when there is a, I'll give you the example, an operation run by a given member state of the EU, with or without cooperation of Europol and member states even with Frontex. That whenever there are links to the investigation, that of the criminal act that happened in the non-European member state, typically if the member state has liaison officers, they will try to communicate, they will try to do something. But often they will not have liaison officers in some of the countries which are the origin of the criminal activity, or the actors from that nationality, or the criminal group is there also, so you would leave that part of the information unattended, not even shared in any occasion so that needs to be avoided. There has to be not to talk about those INTERPOL member states that are not European member states where there is a lot of intelligence. For instance, from the military where there is, I'm thinking about Africa, where it is the military in charge of most of the activities at the borders or in places which are not accessible to others. And there are criminal organisations, so that type of information I would expect INTERPOL to do the most to try to obtain this information. To be entered into the Europol system and to be shared afterwards. So, what I said at the beginning, simply making your system work and finding a way to agree between them. Now concretely at the borders, I'm not talking now about what we call the two tiers of third countries and neighbouring countries. At the borders, they have the ability of all the information possible that you possess on your databases based on agreements between our organisations. The SLTD is the best example of where a database that you run is essential for us. But I would assume that in the field of counter-terrorism, there is a lot of information that we could be sharing. I don't know the conditions which you share that information with Europol. But when it becomes to border detection purely and not investigations, that will be something that we need to look at. When we talk about the unknowns, and there we are talking about the indicators of risk. Building up and updating the common indicators of risk related to terrorism is critical. That's not happening, that's where I would expect INTERPOL to be really active: the indicators of risk related to terrorist suspects would be collected and immediately shared at the border and there should be a process to do it automatically so everyone is informed of logos and scars and conduct that could be detectable at the borders. These are just examples of something that a law enforcement worldwide agency could contribute to a regional capability as the European Union in border management. Am I getting lost in every word?

Interviewer: Let's move on more the technologies, border technologies so we can get rid of INTERPOL now. We can enter more in the theme of what you are leading now at Frontex. What I have built up so far, based up on literature review, practitioner review, is that I have identified 3 important moments for the border. The first is the pre 9/11, that was called the border-less world. This was very interesting because indeed border-less is something that can put you far from the real situation. The situation was that most of the persons were checked at the border, in the physical line before the transit. Before 9/11, if you did not head to apply for a Visa, you could travel from one country to another without informing in advance and be controlled at border level. Then after 9/11, there was the introduction there was the introduction of the concept, the so-called 'smart border'. You touched already about the fact that the concept of the border was stretched in time and in space because pre-emptive measure, API and PNR and e-Visa all these kinds of things that are made possible to analyse in advance the risk of one person. And then we are entering into the future. There is a big pressure from industries mostly. But also, from other border stakeholders, so I am thinking about agencies like ICAO, IATA that to represent industry alliance, to undertake new technologies for these so-called seamless approaches. A new approach for the travellers. So, my question is first of all what do you think about the seamless approach? If you see big differences between the current smart border and the future seamless border, what will be the impact for border agencies if this concept of seamless will be somehow followed? What do we have to change? Your idea?

Interviewee: That question is a book. This is tremendous. There's a part on what you know is called foresight. The technological foresight, which is essential. It's not only what information do we have about the future or how can we analyse and forecast future, it's about how can we influence the future to become the one that we want in terms of technology. And that's technology foresight. That's what we are trying to establish at Frontex. But your questions are all very difficult. I would say we're right now in a moment where the transition to digital borders, or to seamless borders, or to borders where the physical intervention is reduced to minimal, is being not only driven by industry, I would agree largely to that, but is being I think challenged. There is a drive of industry, but it's not focused on us. It's not focused on the borders, it's much more focused on the much bigger markets smart cities. The big market is smart cities. That's where the money is, and all the solutions come from there. So basically, they come from the civil world comes from smart cities and the non-civil world comes from defence. Those are the two areas where industry is investing a lot on research into how to facilitate security or defence processes or civilian processes that have potential to bring money into the market. There will be buyers, big buyers, which are usually governments at the markets. As I say, smart cities is clearly one of those. Currently, I can give you an interesting example of the entry and exit system. So, the entry and exit system is decentralised, so member states should apply it. It's a system that looks at smart borders, but it's already having one eye on similar solutions. So, it's looking at acquisition of biometrics with a minimal level of intervention, possible with the kind of level of

technology. So, we're talking about there, basically biometrics on the move as it is called. Probably you have met it already in your research. So, it is acquisition of digital information, or face recognition systems, when people are moving in a certain environment which is not requiring them to stop. There is no longer a border crossing point. Physical per say, in a booth, people just go through a channel and basically, it's a container. It's a Faraday cage. People go through and you have systems acquiring information from not one individual, but all the individuals going together. So seamless more than that cannot be in terms of technological solutions. The level of accuracy of current technology is still not 100%. So that's why research is very much there, in that specific area of biometrics. And currently most of the systems are requiring the combination of solutions, so facial with digital.

Interviewer: Now my question is about EES. You say that there it's already foreseen acquisition of biometric in the EES.

Interviewee: No

Interviewer: Ok, I misunderstood.

Interviewer: So, the entry and exit system is agnostic to the way you acquire biometric data. But it's a biometric system, so you need to have biometrics. So, it's imperative to check the chip, so the travel document against the biometrics of the person that is crossing with that document.

Interviewer: But this indeed, already exists, within the automated border control because one-to-one check is done.

Interviewee: But the big difference. ABCs were the first solution in airport locations. That's why airports are much more prepared than land borders and maritime borders. But here we are talking about a 100% check of everyone that leaves and everyone that enters. So, until now the focus was on selected people with programmes that could go through a way of entering or exiting that was lenient, that was lighting. You were pre-checked, or you were meeting certain conditions, so you could go through the gate. Now we are talking about everyone. Everyone. Leaving or entering. At maritime ports. At small maritime ports, in the marinas. A yacht comes. That person coming from Ukraine with an American that comes. That is far away from land borders. People come- 15/20,000 cars. Of course, there is no biometric system in place. There is nothing. People show a passport, they go through. There is a check with a mobile device if at all and we're very far away from a seamless border, not even a smart border, at land borders. That's where, just imagine France and Brexit. Suddenly France was having a number of passengers. Now they have from the UK into France, there are 45 million approximately passengers per year. So, you would have them come into you at one border crossing point which is a change. It is unthinkable with this kind of level of technology. So, all of those elements are completely new. The entry and exit system are the first of all these policies, saying you will do it from January 2021 and second, you will use this application for it.

Interviewer: And do you expect that all the biometric information acquired in the seamless process can be checked against databases? I am thinking about these interrogable packages in Europe where there will be several databases accessible including probably the biometric. INTERPOL is more the one that is now in the interoperability limited for me. If we think about seamless processes, we have to think about the check of biometric information. I don't know if you agree with me, because this is something that I have elaborated so far. It's that the biggest difference between current smart concept and the seamless concept, is the change of identifier. Now we have travel document, tomorrow we will have the biometric information. Now we are passport-centric, and tomorrow we can become human-centric.

Interviewee: Totally.

Interviewer: I am happy that you agree with me.

Interviewee: I have said here that we are not investing one second in doing research on any physical platform where biometric information is contained. And not in security measures or the future of security measures of documents. Documents are history. In 10 years, there will be documents. There will be this, or a similar device that we carry on themselves. From that angle, there is a major revolution coming.

Interviewer: So, do you expect that in 10 years that this will be the situation?

Interviewee: 10 years... I measure 10 years because this will be the minimum time for research to be worth the investment. So, when you do research you know about the technical readiness level. So, if you do research, you are dealing from 1 to 4. If you do innovation, you're 5 to 9 or basically 5 to 10. So, if you do research, you're looking 10 years ahead. In 1 to 4. So, you are going to leverage with your developing knowledge or ideas basically. Your inventing things. In innovation you're the other way around. In research you are discovering things, in innovation you are inventing things. You have a physical tool or prototype and then you have something you go to the market with to gain money. I think I would not invest in research 10 years, 15 years maybe.

Interviewer: And do you expect that this will be valid worldwide, or only in let's say...

Interviewee: I suppose you are touching there the ethical aspects of research and innovation. The more technology is placed on the screening of persons, the more likely it is that the technology gap between societies is bigger. And that's a major issue. And that's not only related to rays, to geography, it's also related to wage. The evolution is so fast that we are leaving people that are not able to maintain the pace of that evolution. People now, in some countries, taxis companies are closing but people don't know. And people don't get over, my Grandfather is dead, but my father don't talk to him about getting an Uber, he doesn't even know what it is. That is an ethical gap. And from a practical point of view, it's a big issue.

Interviewer: One point that you touched on.

Interviewer: I forgot to tell you. I was going to tell you about the entry and exit system, and biometrics solutions around this that are required. Depending of course on the typology of cases that the member states need to face. If it's a train, if it's on land. The biggest thing, and you were referring to the lobbies of industries, and how industry is pushing us. In some occasions, because we haven't been talking to industry in the right moment, in the research moment. Industry is not prepared and currently with entry and exit system, we see that industry is not prepared for the solutions that member states require for the typology of cases. So right now, one of the biggest concerns when it comes to innovation, because we should be talking about seven at least, is that there are no near-to-market solutions, certainly not market solutions, that respond to any of the business cases that member states have. Or acquisition. It's amazing.

Interviewer: It's amazing that maybe they are so much amazing with the similar solutions and facial recognition and so on, they are not able to provide...

Interviewee: No, but facial recognition only provides 70% of accuracy if at all. When you go in groups, in biometrics on digital biometrics acquisition, I think it was around 60 or 70% also depending also on the environment. If you become very restricted individual in the flow, then it's more dependent on the system. But it's not about that, it's the transfer of information, it's the security of the information that is transferred. If you are in the marina in the south of Italy and there is someone who is registering, who has registered, and is put in the biometrics. The transfer of information from that point, very far away in the South of Calabria, in Sicily, and you have a central database in Rome. That information with the protection of personal information is not solved. It is not, so that is an issue.

Interviewer: And do you think that the data protection legislation should be adapted, or it is already?

Interviewee: So, for law enforcement, still unclear for the agency. We need to implement the rules we're developing right now and adapting to what will be the future directive. So, in line with the current regulation of course. Which is basically for companies right now, we see how law enforcement is going to be affected.

Interviewer: And you touched something interesting. The smart cities. Do you mind if we go a little bit more in detail? Because it could be a very nice part that I could elaborate. Can you explain a little bit more what it is, the concept of smart cities? Because you refer to smart cities when you introduce the concept of seamless border. So, I want to understand better what is smart cities concept and how it is linked with the seamless concept. So probably if I have understood what you said, the seamless border is driven by the smart cities concept.

Interviewee: What I am saying in practical terms is the smart cities vision of governments is one of the markets that is attracting mostly the investment and research of companies. That's what I am saying, when companies are looking. What companies do is they, in the absence of law enforcement and border managers and border management, knowing about our future problem. Because we're not very good in knowing about tomorrow. Tomorrow I will deploy this because there is a boat coming. But if you talk about 5 or 10 years, not so good. As well we talk about technological foresight. When you talk with a police officer, he's worried about what camera to buy now to deploy here. Don't talk to him in 5 years. There's hardly any conversation. So, the industries researching for us what would be our problem for the next 10 years, so they can decide on their strategies, on research, to develop technologies.

Interviewer: But it's not because it's requested by us?

Interviewee: No, they need to know and they're not getting a response from us. We're not telling them my problem might be this. We're not.

Interviewer: Can you elaborate a little bit more on what is a smart city?

Interviewee: For me, a smart city, there are many, google, there are many concepts. It's facilitating, learning from the global conduct of a city, citizens and means in the city to take decisions, to make it an effective place to live in, a common space to live in. So smart cities effects traffic lights. So instead of having a system where you have that changes the traffic lights every 30 seconds, smart cities there is based on satellite systems, decisions are taking by the traffic lights. Now I open, now I give you 10 seconds because of the traffic flow. I have all the information available. Smart cities are a shop is open or closed depending on, we're talking about here of course artificial intelligence, big data solutions, not even artificial intelligence, it's called now cognitive intelligence. Cognitive intelligence is, data is not based on statistics, let's say on decisions that people take that are recorded. They are based on what cognitive intelligence does, is that it breaks the algorithms breaking down the decisions so the conduct on people into mathematical values. So, if I go in this direction, or if I look at the shop with this amount of light, if I stay, how many people stop at a certain showcase. Shop of a certain brand, if the amount of light here makes people trip over when the conditions are. All that is read by cameras and gives you big data, enormous amounts of information that give you possibilities of decision. There I need more light, I need more police officers in this part because the intuitive information that people have is making them knowledgeable to commit crimes there and not here. So, I need to anticipate that, because I have learnt that when this happens, there is going to be an increase in crime, so I am putting police. That's smart cities: deploying all the resources to manage a city, including security.

Interviewer: And the same concept applied at the border.

Interviewee: The border is a smart city; the border crossing point is a smart city. Where you have security, you need to put shops, you need to put people to go to the toilet, children to be managed in an effective way. It's small smart city, a border crossing point.

Interviewer: What is the role of risk analysis in smart cities? Is there a role?

Interviewee: Security, anticipating with the same level of all the information. So, make people that don't need to be disturbed, go through without a need to be disturbed. And to anticipate that the level of the individual who should be stopped. And if you don't know which of the conducts or behaviours of the travel itinerary, or even the person physically there, approaching the border crossing point physical one. Will be looking, stopping, going to toilet before going. There is a certain number of behaviours that makes you 'ok this person, maybe I will have a talk with them'. That's risk analysis, it's having the rules, the criteria which to base your decision.

Interviewer: Last question. What are the risks that you see beyond this evolving concept, the concept of seamless? Are there any big risks that you see?

Interviewee: No, I told you. I think that the ethical risk is probably the biggest one. And of course, you have there the technology gap that might be created. I explained the basics of that to you. So, it's not only races, geography, country, it's even within our societies. That's already a big issue. And the second one is privacy. The big ethical discussion on privacy.

Interviewer: Yes, related to ethical issues.

Interviewee: So, if you are reading the conduct of everyone, then if you don't want to have a known conduct, because everything will be mathematical.

Interviewer: Because I think also there is a technological gap as may be. This is my first impression, something to do with the development of global standards. Because there is a risk that we enter into this new era in which two different technologies will elaborate on different standards and does not communicate each other.

Interviewee: But it's not only that. Standards are the base of interoperability and harmonisation of systems. But it will not avoid the technology gap. Because right now you have standards. In other areas you have soft standards, it's more guidelines-or best practices. Which countries cannot reach and societies? And if there are possibilities for them to, it's just a very small amount of people in those societies. It's the wealthy people or the people who can afford to. So, standards do not

solve the ethical dilemma. They do not. They just help you ignore there are people who don't even reach the possibility to understand the standards. I don't think it solves.

Interviewer: Thank you very much.

8.4. Transcription / Interview D

Interviewer:

Interviewee: Well, for border integrity, there is basically 3 processes that we need to consider. And those are based on what I call the identity triangle. The processes are stratification, authentication and identification. Or is the person really who he claims to be – that's the stratification. So is the person standing in front of you when he wants to pass a border really the person who he claims to be. And then of course we have to authenticate the claim- is this an existing identity? And the third one is, ok, if we know that these data are reliable, are these data in any of our databases so we know that we have to take any kind of action with this passenger. So these three processes: identification, authentication and stratification. These are the bases of what I call border integrity. If you don't have that complete circle of these 3 processes, then you don't know whether the person is really the person who he claims to be and that we are doing the right queries on the document, on the person etc etc. So that's basically what I would call border security and border integrity.

Interviewer:

Interviewee: Of course INTERPOL already gives us a lot of information with the databases that they supply like the SLTD. The notices, all the other stuff that we need for both the inter-world security world as well as the public world. INTERPOL gives us a lot of information so making use of all the notices, the SLTD, programmes that you supply like MIND AND FIND for using the SLTD. I mean INTERPOL does supply a lot of the capabilities that we need at the border. Is that enough of an answer for you?

Interviewer: next question is are you aware of the EU integrated border management that consider 11 elements. How do you see INTERPOL fitting in some of them?

Interviewee: Well I don't know all 11 elements by heart, so you have to help me there in a little bit in a moment. I know that the European Integrated Border Management consists of several things like all the European systems that we have and will have in the future, like ETIAS EES , Eurosur, ECRIS, all the other European systems. And of course, all these systems make sure that we are using the right data to assess the person on whether they are allowed to cross a border or not. Can we go through all the 11 elements?

Interviewer: List of the 11....

Interviewee: Let me stop you there for a moment. Because as you know I work at an airport, and I have hardly any dealings with the border surveillance on land borders and sea borders. So I can't give you a lot of info on that part. I can give you a lot of info on stuff at air borders and other rescue missions, but not at sea and specific land borders. Because ok I just, that's something I can't help you out if you need to interview someone else with that.

Interviewer: Role of INTERPOL within countries to facilitate and increase border security.

Interviewee: Well, as you know, last year I made this comment to the European Commission about European legislation on borders where we have to comply with the GDPR. But I think that should only apply between border management and, for instance, airlines where we exchange passenger data. But of course the whole border process is much more than legislation that falls on the GDPR. We also do things on the law enforcement rules, we do things on the intelligence rules, so INTERPOL could help all the member states by explaining to the European Commission and other European agencies that border management is not a public task. Yes it is a public task but it is also a law enforcement task and it's also an intelligence task to do the work properly. So on the legal part, I think INTERPOL can help member states a lot by showing what the work encompasses and but it all, err, err, what's the proper word in English, it also has to be taken into consideration to do a good border integrity. So, yeah, on the legal part I think INTERPOL can help not just the [...] but all of the member states. But not even just the European member states, but all over the world, to make sure that we have a proper disclosure of data between member states and, maybe can even collect data of known criminals and known terrorists to make our life easier. I know that currently there is this UN resolution that says that known terrorists, even the biometric data has to be shared between member states. But the GDPR prohibits that so that's kind of an awkward conflict in legislation. So INTERPOL could help on all kinds of legal aspects, that's what I basically wanted to point at.

Interviewer: Challenges where INTERPOL can facilitate

Interviewee: Well to get a stronger border collaboration between member states, and then of course we are talking about all member states all over the world, not just the European Union. We need to have the same kind of legal aspects to take, to be taken into account. As I say, in Europe has to deal with the GDPR. A lot of countries don't have this kind of privacy legislations that are so strict. So they can collect a lot more data, they can store a lot more data, and they can process a lot more data than we can do in the European Union. So one of the things that INTERPOL can do on that account is make an inventory of what kind of systems do we have around the world and what is the most common denominator. So this is something that every state can fill in, like we do in some of our other systems. Like this is the basic information that everybody should know. And then in compliance with the UN resolutions for sharing for instance data on known terrorists. This is a database that INTERPOL could manage, could maintain and distribute.

Interviewer:

Interviewee: About the UN resolution 2178 and 2396 states very clearly that known terrorists should be made known to all member states. And all member states should share the data of these persons. Even the biometric data. So even if we only have a photograph, a fingerprint, on let's say an explosive device on some other things. Those kind of data should be shared among member states to single out those terrorists, to track them down and make sure they don't flee country or move from one country to another so they can perform more of these acts. So I think INTERPOL can be the organisation that collects that data, makes sure that it is properly set up and that only the information that needs to be shared among member states, and then the right parties within those member states, can access that data.

Interviewer:

Interviewee: And that of course needs both on the political, operational and technological level, needs a lot of fine-tuning. And I think INTERPOL could be a very good organisation to facilitate that.

Interviewer:

Interviewee: Well I mean I'm talking about the future of border management, as you already said. In the past I mean we had a border guard that looked at the picture in the passport and looked at the person in front of him. And said well there is enough similarity, I will let you pass the border. With the introduction of biometrics we can do a lot more. And I even believe in the use of multi-modal biometrics. So not just the face but also fingerprints, iris, or whatever other modalities we can think up with. And in the concept, we get to a stronger perception of the real identity of person. Because if you have to fake not only a face, which you can do for instance with a mask, or with a photograph or whatever. But if he also has to do an iris, or a finger, or both, you raise the threshold of expertise needed to assume another identity that a lot of criminals do. So by using biometrics, and especially multi-modal biometrics, it becomes more and more challenging for criminals to pass under a different identity and assume a different identity.

Interviewer:

Interviewee: Yeah, but not for all passengers and that's the problem. I mean here in the [...] we are kind-of spoilt because we are a very highly populated and very organised country on a few hundred square kilometres we have 70 million people. We have a lot of municipalities where we can apply for an identity document. So travel will be, say, half an hour to an hour at the most for most people to apply for an identity document. In some countries, this is not the case. So people have to travel sometimes for days. Especially because they don't have the infrastructure, they don't have the roads, they don't have, well you can think of all the limitations that some countries have to apply for an identity document. So in the [...], and most of Western Europe, we don't have those issues but in, especially in countries like in Africa, or in Asia, where roads are not as accessible as they are here. Their municipalities are not in every five or ten kilometres. Yeah, they have a bigger challenge to enrol and register people. So the whole issuing of documents is something that is an issue for some countries. In, what I now will call the developed countries, no disrespect to the other countries, but we do have a proper issuing system where, it's say convenient for people to apply for a document. We can indeed already use this technology or our municipalities in the [...] where you have to apply for instance a passport, you have to give your fingerprints already. We are now in the process of making a live photograph at that stage, because you are there live so why would you bring your own photograph, you can do that at the municipality as well. One of the things that we are now thinking about for our travel programme at Schiphol airport is to enrol people with both face, iris, and finger. So the technology is already there, but it is not adapted everywhere. So the technology I think is ready but is it able to be implemented everywhere? no not yet, that will take some years.

Interviewer: when you introduce the triangle. What do you think about the future seamless concept. The triangulation will be kept of something will change?

Interviewee: It all depends on how accessible systems are. You could deduce it to a bilateral exchange. I mean if we would have, this is really, this is really future, if we would have a world database of people, a digital identity that is unchangeable etc etc. At this moment there are several concepts on digital identity based on blockchain technology or an immutable database or all kinds of concepts are out there. If, as a border guard, I can access that database, and I am sure I have accurate data, then you don't have triangulation any more, then you can have a bilateral exchange so you claim this identity, I go to the system, I say ok give me all the data from this identity and then I can check your fingerprints, your iris, your heartbeats, whatever, your DNA, depending on what database of course. And you can do that identity claim verification very easily. As long as we don't have that worldwide database, there will be the need for the triangle as I described it before. Because we don't have access to that world database. So you need an extract of that database which is in fact the passport. So you still need to check is this document authentic, does it belong to the person, and is the data reliable to be used to create all the systems, so that's where the triangulation comes from.

Interviewer:

Interviewee: So basically you don't even need a world database. But if I can have access to all the population databases of each and every country through for instance a concept that INTERPOL sets up as a facilitator so as a Dutch border guard I can ask INTERPOL give me the details of this person from, name a country say China, and China is willing to supply that information directly. So I know from the Chinese government that this is reliable data for this person, then you need only that electronic connection. And I can get all the data and compare it live with the person, then you don't need the document any more. I'm not sure whether all countries are willing to share that kind of data and give access to those databases. So in the meantime we still need a document as a token. And whether the token will be a passport, or whether the token will be a mobile device like a smartphone, or whether the token will be the chip in the palm in your hand. Or whether the chip will be I don't know what because technology is constantly progressing. But as long as we need a token to, they need that triangulation. Only if you can get this source material directly, then you can do bilateral.

Interviewer:

Interviewee: Well, the simple things that you have to take into account. If I am looking what happens worldwide, we see a lot of merging of government agencies like border control and customs in a lot of countries they are now one organisation. In some countries it's customs and immigration, sometimes it's border and immigration, sometimes it's the three of them. So you see that now a lot of border agencies are getting more involved in one another because there is a lot of overlap. We will kind of get rid of those silos that we had before say the year 2000. On the part of public private cooperation, that's where we have a challenge because in Europe we are bound by the GDPR. So we can't share all the data with private companies. We can share data within the public domain. But we can't share data with public, private party. That's why we need a very solid authorisation metrics on who gets what data and for what use etc etc etc. And that's really a fairly complex business. So one of our concepts here at Schiphol airport, we are now working on the seamless project, where we are now struggling with this. So how are we going to use which information for which purpose, for which party. And that's pretty tricky.

Interviewer:

Interviewee: I think INTERPOL can play a very important part in that. As you know in a few years time we will have the ETIAS ruling in Europe where every traveller needs some kind of say pre-clearance or at least authorisation to travel towards to the European Union. And how do we know that we are talking about right person? So keeping a database of registered travellers or known travellers, or whatever you want to call them, or known villains, that could be a nice task for INTERPOL to make sure that people don't grant criminals access or prohibit bonified travellers to travel. So I think INTERPOL can do a nice job on that as well and can facilitate some of the things that we need for that future border.

Interviewer:

Interviewee: Well the smart border is from the EU, it focusses mainly on travellers who want to enter the EU and how long they want to stay in the EU, instead of what kind of globetrotter is trying to get into the EU. So it's more a rule-based approach than a risk-based approach and currently with all the things that happen in the world, I mean we have seen this weekend what happened in New Zealand, where an Australian guy, so more or less a native, an own-country person, not a foreigner, does something that nobody would believe would happen in Christchurch. We have seen it in Paris, we have seen it in Brussels, we have seen it in Berlin, we have seen it in Cologne. I mean there's all kinds of terrorist threats that we need to counter and the only thing we can do is make sure that people can't travel on other identities and hide who they really are. So if you have a biometric database under the space of INTERPOL or maybe the space of another national organisation. These are trustworthy travellers and this is indeed the real identity of a person. Yes, I think that's something INTERPOL can really influence border integrity for a lot of member states.

Interviewer: in relation with EU SMART, it is more rules based-approach than risk-approach.

Interviewee: Yeah, well I don't think that the risk-based approach can be better facilitated with a seamless concept. I don't think that's completely true. Why is it still rule-based, because not every individual passenger at this moment is being assessed as such in PNR, in API and all the other stuff. It's more like what is the risk of this total flight and how many persons are on board. What is, are there any anomalies on that flight, whether it be nationalities that you don't expect, whether, I mean that's no longer the issue. The nationalities and the data that we collect of those persons are not enough to get to a proper risk assessment. You need other kind of data to assess whether a person is a threat at this moment in time. I mean from my own track record there's I've never been convicted, I've never had, well I've had to parking tickets ok, but there's nothing in my track record. I've always been a civil servant so there's nothing on me. But nobody knows what I am doing in my spare time, whether I am an extremist. As long as I don't publish it on social media, like the guy in New Zealand did, nobody knows what I'm thinking, nobody knows what I'm up to, so that's why I'm still saying we are working rule-based and not risk-based. Because we don't do an assessment at this point in time, if you get what I mean.

Interviewer: Additional element to be taken into account

Interviewee: Exactly. Data and PNR, data is not enough to really assess a risk, if you want to work risk-based, is this person really a threat right now. Then you need additional data. For instance, the guys that are being groomed by the Jihadis for instance. The guys that are being properly dressed in white and then they carry this knife, homemade bomb, to a certain place to have it detonated. The moment that you create such a person, an API and PNR data, there is nothing wrong with that person. So you need another kind of data to assess. Because this person will probably have a higher heart rate, he will have a higher body temperature because he is nervous. He will act differently in the surrounding. On the API and PNR data you can't do a proper risk assessment on this particular moment. That's what I am trying to explain to you.

Interviewee: Yes yes yes. And just to make sure, even in Europe, at most of the e-gates, there is always a border guard present to monitor and to see how people are behaving and reacting to stuff. So it's not just in North America, it's also here in Europe that we still have border guards doing the surveillance or the monitoring depending how you want to call it, of the e-gates. So it's not that, the e-gates take away some of the work of the border guards but it doesn't replace the border guards.

Interviewer:

Interviewee: Well, all the extra information you can get. I mean just again looking back at this guy in New Zealand had posted on Facebook before, what he had written, I mean he even produced a complete manifesto of 70 something pages. If that had been known before he travelled to New Zealand then maybe they would have refused him entry and he couldn't have done what he did in Christchurch. So use of those social media can be very good help to do as I say a risk-assessment on the spot in the moment. On the other hand, if people don't publish it on social media, what does that mean? Does it mean that they are not a threat, or does it mean that they didn't publish the threat? So I'm kind-of, I'm bivalent on that. On the other hand, some people post things on social media where I think well this is kind of private so why would you put it on social media. And still people don't, still don't realise how they have to make sure to protect their data on social media. I mean a lot of people if they say it's only for friends or friends of friends then nobody can see it. Well then almost the whole world can see it you know. People don't realise how accessible data are as long as you are a friend of a friend. So I think that some of these settings should be different, it should be clear how data is accessible to persons that you don't want to look it. So yeah I think we need to educate a lot of the public on how to deal with social media because a lot of people don't realise how much data they are actually sharing.

Interviewer:

Interviewee: There is, there is a lot of things that are challenges for the seamless concept. As I said before, one of the challenges that we are facing is how do you get reliable data. Do I trust a passport or do I want access to the originating data, so the database or the population database or a digital identity. Or something that has you know another anchor than the paper you're supply. So that's one of the challenges. Where do you get your reliable data from, how do we know it's reliable data? Another thing in the seamless project is how good is the biometrics that we use? I mean, you probably have seen the publications from the university of Bologna on the magic passport, on more thing, but also how good are algorithms to compare faces. We have done some experiments here, how good are biometric systems in detecting masks, in detecting (43,26), in detecting well you name it. I mean there's so many vulnerabilities in an ABC system, in the seamless concept, just on biometrics. And then of course we have the part, the real physical part. What kind of barriers do they need, or containment or human traps, or whatever you may call them, to isolate people that you want to isolate. So there is a lot of challenges in the seamless concept that we are working on but still I think that, as you said, with the growing amount of passengers we need to do something to be able to process all those passengers. So we can't keep on doing what we did for the past 50 years. We have to innovate and we have to progress and we have to do a step forward. That also includes targeting the right people and

then we get into the whole border integrity cycle. What kind of info do I have, how can I target a group, how can I task my personnel, how can I act in the right manner to process them. So that whole cycle, everything has to do with border security and border management has to be taken into account, and that's a pretty complex field.

Interviewer:

Interviewee: Yes I think INTERPOL can be responsible for the biometric data. And then of course we need to discuss will INTERPOL only do what I said the known criminals, known terrorists, or will INTERPOL even do the bonified so instead of having just a blacklist can we have a whitelist? Because if you're on the whitelist, then we know, you're good to go. I mean in both cases you can extradite the border control process and you know that this is a person that is trustworthy, reliable, bonified. And this is just a businessman goes for his 37th time to whatever location, just let him go. I mean you don't have to process him in all the steps that we currently do. And that's what the seamless concept is about. It's about known travellers, trusted travellers, that actually don't need our attention. Then on the other hand, we have the known criminals that we want to stop at the border and that we want to act on. So there's two different kinds of roles that INTERPOL can play. Being a police organisation, I think that INTERPOL should start with the blacklist. And once the blacklist is fully operational, I think it's also very easy to make a whitelist. And everybody that's not on the blacklist or the whitelist, so the greylist, these are the people that we have to deal with manually.

Interviewer:

Interviewee: I think that the whitelist should be based on all kinds of information, and that's a big part of the smart border initiative where we see how often a person travels, where he travels to. I mean to give you a simple example, I visited Singapore last year and on the Malaysian/Singapore border, they have a nice concept that people are let through once and they can just... And a lot of people there are commuting between Malaysia and Singapore because a lot of Singapore work in Malaysia and a lot of Malaysians work in Singapore. So they have a lot of commuters passing the border every day and after checking them 20 times then you know that they are just going to and from work. And they are in their normal intervals say between 7 and 8 am, they are going one way, and between 5 and 6pm, they are going the other way. You know this is a normal traveller, this is a normal border passage. And you don't need to put much effort into checking this passenger. And of course you still need your randoms, and of course you still need to see if they're not carrying contraband and that's where all the government agencies have to work together. I mean the fact that you think that it's not interesting from an immigration point of view or from a border security point of view, it still can be a point of interest for customs. Or it can be not interesting for customs, but it can be interesting for immigration. I mean all these agencies have to work together.

Interviewer:

Interviewee: That's what I meant with, we need more information than just API and PNR. The fact that you have crossed the border in Singapore and Malaysia 400 times doesn't mean that you are a traveller. That doesn't mean that you are free to go to Europe or to the United States or to Canada or to whatever. No, then you need a different kind of translation.

Interviewer:

Interviewee: If you need more questions, I will send you my email address and other details. Just send them to me, and I will see when I can get back to you. Unfortunately, next week I am in Malta for a conference for a week so I won't have access to my mail. I will have my phone with me but...

Interviewer:

Interviewee: Consent form, yeah. I will print it out and sign it and send it back to you.

8.5. Transcription / Interview E

Interviewer: Interpretation border integrity

Interviewee: Well, actually no. I worked for many years in the UK Border Force and since I left government I've spent a lot of time working with a number of border agencies around the world. One thing they have in common is a vision, a statement, which really is to facilitate, facilitate genuine traffic, that is people and goods mostly, because many borders now cover customs as well as people. But to facilitate genuine people and to prevent non-compliant and harmful people and goods from crossing the border. So for me, border integrity is the second part of that. It's how do we together prevent: harmful people, harmful goods, non-compliance, smuggling, trafficking from crossing borders. And, so if you have border integrity then you are preventing that illegal activity and that's my understanding of what we would mean by border integrity.

Interviewer: what are for you the current INTERPOL border capabilities and what they can bring to border integrity?

Interviewee: Ok so, so I think INTERPOL's main, main asset in global border management is the Lost and Stolen Travel Document Database. INTERPOL was the only international organisation that saw a value of keeping a central database of all lost and stolen travel documents. I think that has been hugely valuable across the world. The problem is that not every country uses it, I think that has been a challenge. But that has been I think the main value for INTERPOL in respect of borders. I think other areas where you are active are less well-known to the border agencies, you know things like the red notices, the green notices, the other aspects of your work in borders I'm not sure that many people understand exactly what they are. I know they're on your website but I think your communication with border agencies could be more active because I think pretty-well everyone that I speak to knows about your Lost Stolen Traveller Passport Database. Not everybody understands about the red notices, the green notices, and the other things that you do.

Interviewer: EU Integrated Border Management Concept.

Interviewee: Yes, I know that the Frontex have got a definition of Integrated Border Management. There's been several documents written about this. In Canada, they have one. There's one in the EU which came along before. Before the Frontex one. So I know quite a lot about Integrated Border Management. But essentially, these all add up to the same thing which is that at our borders we have several different agencies working there. In the UK for example, we have 26 different departments, agencies, you know we have customs, police, intelligence, border force, agriculture, the list goes on. So Integrated Border Management to me is well a national level, how well are you agencies working together in your own country? first of all. And then at EU level, how well are your national agencies working at the higher international EU-wide

level? And I think that is a real big challenge for Europe. I think that you have a huge challenge on your hands there because as you know very well, there are so many different systems in place both at the national level and at the European level that even trying to get agreement on how these systems would talk to one another, which agencies can access them. What about privacy... Paris attacks about the lack of information sharing at national and EU level. And this reminds me a lot of 9/11 in the US many years ago, the same problem occurred. So I think INTERPOL has a role to play because you are a global organisation and you also cover lots of different aspects of international crime. I think the problem you have is that INTERPOL is traditionally associated with police and not necessarily with border agencies. And in many many countries the police do not operate the border in the sense that they are not the people doing the checks on arrival. Even in Schengen as you know, not all not all it's not always the police you know it's the [...], it could be [...], there are different agencies and somehow people say to me but INTERPOL is a police organisation, it's not a border organisation. So why are they talking about border, border management. They should be talking about integrated police management. So I think there's something in the way INTERPOL projects itself, maybe you should think about creating a, a new identity within INTERPOL which is much clearer about your role in global borders. And have you know a section of INTERPOL that is your global borders section with much better communicate... Because I still feel when I talk to people about INTERPOL many people think you are just the police. And you don't deal with immigration, you don't deal with customs, you don't deal with a lot of things that actually fall within integrated border management. Because you are basically a criminal, an anti-crime agency rather than some of the other things we need to do at the border.

Interviewer: at the level of member states, what do you see INTERPOL can do to facilitate border security and consequently internal security?

Interviewee: Yeah, so I think Fabrizio, in the EU context one of the challenges you have is Europol. Because not everyone understands what is Europol, what is Interpol. Why do we need two pols? Which one is doing which thing? And again I think that needs to be much more clearly defined because most EU member states will talk more about Europol than about Interpol. They talk about INTERPOL in terms of yes international organised crime which takes you outside of the EU to third countries. But for organised crime within in the EU, well many people that I talk to say we go to Europol for advice on that area. So I think again this is a challenge for INTERPOL in terms of your identity, what it is that you are trying to do in Europe. Not just in Europe, but globally, and how you can define your relationships with other IGOs and NGOs like Europol, like Frontex, you know like us here at IMBATA, you know we had to do a lot of work on this. We said look, we're not trying to take over anybody's space. What we're trying to do is join the dots because wherever we go, we find some gaps somewhere. And I just spend a lot of my time putting people in touch with one another, saying hey you know you need to speak to this guy. And so what we need to do, I think, all of us, is try to build better communication and an understanding about how INTERPOL will relate to, not just to the member states, but to other organisations like the ones I've just listed there. So we all have a better understanding of where INTERPOL fits in the EU picture.

Interviewer:

Interviewee: No, I mean I don't think so. You know you've asked about the political, organisational, technological level. But you know for me, you'll be well-known on the circuit, Fabrizio, you are very supportive of events. You come out regularly, but I don't see, you know if someone were to ask me, and I know a bit about this business, what does INTERPOL do, what does Europol do, what does Frontex do, is there a very clear chart summarised on 1 or 2 pages about who does what? What are the areas that you do alone? Like Lost and Stolen, that's yours. What are the areas that they do alone, and what areas do you overlap? I think that would be really helpful, but I guess that's part of the work you're doing here.

Interviewer: what are the different system implemented or will be implemented to balance facilitation and security?

Interviewee: Yes so, I think you're right, I mean we know the challenges in volume is going up, risk is going up, complexity is going up. So in terms of the future border, then you know, people are looking increasingly to 3 main principles that we give advice on to border agencies who ask us for help in terms of writing their own strategy. You know we've been to places like Malaysia, and to India, to say look these are the areas that, it's your border, you have to decide how you run things, but there are 3 main principles. And the 1) first one is to try and do your checks before people arrive at your physical frontier. If you can get data on people and goods for that matter which is accurate and you can do your risk assessment before those people or those goods arrive at your country, then that is a multiple border strategy, that is what everybody is trying to do. So that's the first thing. 2) The second thing you already mentioned is integrated border management. So how well are you working with all of the departments and agencies that have an interest in your border? Do you know who they are? Have you talked to them and have you agreed an integrated strategy about what the priorities are? What is the most important thing? Is it stopping crime, is it terrorism, is it drugs, human trafficking, fiscal, you know health? You need all of these things in a border strategy. And that will have to involve lots of departments, not just the border agency. And I think the 3) third one which is probably the most topical and interesting, Fabrizio, which you know we're doing a lot of work on the next 3 or 4 conferences I'm going to be at in the next few months is this end-to-end identity and the biometrics and the use of you know identifying somebody on a biometric database, not just a name based database. And creating you know a greater number of what we would call a green list of people who are already risk-assessed, that are trusted or a register traveller group and uploading their biometrics onto a system, a government system, which can be accessed at your border, including at your point of departure from a country and your point of arrival. So we know the Americans are already doing this, CBP are doing a photographic facial recognition on departure to deliver the biometric exit. We know Australia are pushing to have 90% of people by 2021 well just look into the camera when they go through the border. They won't have to stop and hand their document to an officer because we will know who they are, we will have done the risk assessment, we just need to know this is the same person and the risk level hasn't changed. And then you know there's all this stuff, we've got ICAO coming out to talk to us at Istanbul about the digital traveller credential. And I think you've got questions coming on later down the line on that but this whole idea Fabrizio is that actually you know if you've got a trusted database of people, and I think INTERPOL could help with this you know because you guys are global and you've got a lot of data. But I would not have a problem uploading my data to a database held by you, and I would pay you for that, and you could say to me, we know this bloke [...], we know this guy, he's a former head of borders, he's always flying off all around the world, we will vouch for his security. And I will allow you to check with the British the American databases to see if there's anything on me. But increasingly you know Fabrizio saying hey [...], you know, in this day and age, why can I not be put on a global green list.

And someone who you know will audit that list and make sure I'm genuine. And I don't care how much information you want: you can have my credit card, you can have my social media, I just don't want to have to keep doing what I do now and queue up and see an officer and puts my passport in a slot and asks me silly questions. There are better ways of doing it. So I do think the identity revolution is here. We are already seeing it in the 5 eyes, the EU have got a lot of aspirations as you know under smart borders for the same thing that, in the next 10/20 years, border control will face a paradigm shift. We will not be checking people in the same way we do now, and that will all be brought on by technology in my view.

Interviewer: difference SMART and seamless?

Interviewee: Yes, so the smart, the smart border initiative to me is the EU Smart Borders Programme. And as you know Fabrizio, that has changed you know. We speak to (21,53) and EU Lisa regularly. They come to our events, they come into Istanbul, they come into Ottawa. They constantly update, but the smart border plan is actually driven by the EU Commission. And that started off as being an entry-exit system for the EU, for third country nationals, so they wanted to check people, biometric entry and exit to the Schengen zone. And also there were going to have an EU-wide registered traveller programme. That was before the Paris attacks, and now they said they're not going to pursue the registered traveller programme. Individual member states can do that, so if you want to be a registered traveller in the [...], or in France, that's ok, but it's not for EU-wide. But they're now introducing this ETIAS, this electronic traveller system. So for me, the smart border really is the things that the EU are doing on things like electronic traveller authority, and on biometric entry-exit, and you know data integration and that kind of stuff. I think where the seamless traveller journey differs is that seamless means non-stop process. In other words, even even though you are doing biometric checks on entry and exit, even though I need a... actually my travel from my point of departure from the one country to another country is basically a non-stop process whereby I will give you my biometrics, you will put me on this greenlist we just talked about, you can have my photographs. And whenever I arrive at the airport, I will look at the camera and you will check me through check-in, through security, through exit control, at boarding, so you know where [...] is right, you knew exactly, you took my photo when I left my hotel, you took it when I entered the airport, you took it when I boarded and you take it again when I get off. And then when you go through the border, the principle is you will go through something like a seamless tunnel or you know a walk-through border where actually you are being recognised by facial recognition cameras as somebody who has already been approved. That is the seamless traveller journey concept that we're now working with the WTTC on that. I was at the Home Office yesterday speaking to my successor Paul Lincoln, about doing something on Transatlantic routes, potentially with the CBP. I'm speaking to WTTC in Seville about this week after next, but what we want to try and do, for a group of passengers who are prepared to give their biometrics and their data, it's a voluntary scheme, you don't have to do this. But if you're interested, you could give your data and the WTTC would also arrange for that to be checked when you check out of your hotel, on your car journey to the airport, they are happy to do the same risk assessments on you. Because we risk assess people at the border, we don't risk assess you when you are in your car hire or in your hotel. So they are saying well we can do that. If you want to be added to a secure list of regular travellers, then we would use the same technology either end of the journey. So you can see now a scenario where you could leave your hotel in Washington DC having registered on this programme. Everything after that would be tracked using biometrics until you arrive in your hotel in London. That for me is the STJ, the seamless traveller vision, and that's not the same as smart borders.

Interviewer:

Interviewee: Yeah that's right, that's true. But the question I am asking is: we still have long queues at our e-gates. Our e-gates don't always aren't always open, there still needs to be officers sitting behind the e-gates working them. So we need to look beyond the e-gates. What is going to come in technology after the e-gate? And now if you think about what can be done with mobile telephones, with apps, with digital technology, where you can access your bank account, you can access all kinds of services using biometrics and financial services. If you transfer that to borders, and it has to be voluntary. Because if it's compulsory, people will complain about their data and their privacy. But what I see emerging is a two-track process where increasingly people will say, I will pay the extra 5 bucks or 5 euros to register on that system. Because if that means I don't have to queue up at check-in, I don't have to queue up at security, I don't have to queue up at border control either on departure or arrival, that's worth paying 5 bucks for. So for me, that is what the seamless traveller. So they are intrinsically linked, you will need all the constituent parts of a smart border. You'll need the ETIAS, you need the entry-exit system, but you need to take this to the next level about how do you avoid the queues. And the smart border will not necessarily avoid the queues. If you look at some of the timing on the EU-Lisa report on the trials of smart borders, you are still taking for some nationalities over 2 minutes to get through the border. This is no good, this is too long. You need to be doing this much much more quickly by doing your risk assessments and catching that identity.

Interviewer: The role of border guarding check disappearing in the seamless concept and there could threat & risk from the lack of behavioural checks....

Interviewee: Yeah, well look so the seamless traveller journey will not remove the problems we have. We will still have human traffickers, we will still have smugglers, we will have international criminals and we will have terrorists. By creating this system, we are not going to defeat them. The way we describe this is 'moving the haystack'. So if you think of the haystack, and you're trying to find the needle in the haystack which is the criminal or the terrorist. Right now, we have to look through the entire haystack to find the criminal. This is a painful process for a border guard sitting on a desk or behind e-gate checking passports against watch lists is not a great job, it's boring. What they want to be doing is using their analytical skills and their intelligence. They want data, they want good quality timely data. And they want to be able to analyse data. We still need border guards at our borders but they should be equipped with much better technology, with mobile devices. This is the same thing now is happening in many countries with the police and other enforcement agencies. You can even give them things like Google Glasses where you can look up someone and they can pull up a record. So I think the job of the future border officer will be much much more exciting Fabrizio than the job that I did at the airport, or even the job my guys are doing at Heathrow. Because I can tell you, I know these guys, I go have beers with these guys. It's boring, it's boring just sitting there putting passports in a slot to see if someone's on a watchlist. But that doesn't mean to say if you're not doing, you can't use behavioural techniques, you still need roving officers. That's what they want to do. They want you to give us intelligence and information: where's this flight coming from, or this ship, or this train. Where's this coming from, what do we know about it? Right, now let's go to you guys over at Interpol, let's go to the intelligence guys.

And say what are the big risks you're seeing at the moment: oh, we're seeing Columbian drug smugglers, we're seeing human traffickers coming out of the Far East. And they want that intelligence to overlay that to find those needles. And that for me is really exciting for the border officer of the future. So I don't for one moment think we will ever be able to remove people from our borders. It still takes people to stop people. Technology can't do that on its own. And it takes people to interpret the technology. But the border officer will be a significantly different person, in my view anyway, to the border officer of the past.

Interviewer: use of technology could disqualify border guarding. But it is

Interviewee: Hey, Fabrizio, look at look at other industries. I mean look at mechanics in the car factories. You know look at look at the banking sector. You know you've still got people working in those industries. But it's the tool that you are providing them with. You are providing them with really really good tools that they can do their job more easily with. So your more routine tasks can now be undertaken with better tools. We know, facial recognition is better than the human eye to spot an imposter. So why don't we use that? And there are things technology is better at. But there are things that you must have humans doing and so for me this is providing your border officer with a toolkit. And I like to talk about the toolkit of the future. What will be in the toolbox of the border officer of the future? And some of the things that are coming out on the market are astounding in terms of capability to do the things that they want to do that were not available in my time there.

Interviewer: Extended collaboration. Do you see the seamless

Interviewee: Ok so, so as you know I worked for a very long time in international borders before I left that. One of the best initiatives that I can remember was something called the IATA SPT. So you know IATA right, International Air Transport Association, they convened a group called the Simplifying Passenger Traveller Group. And in this group, we had the border agencies, we had the port and airports, we had the airlines, and crucially we had the technology providers. This was the only group that I can remember in my whole time in government that also had the technology guys in the same group. And we sat down together and worked out how we can help one another to deliver this seamless traveller journey. What is it that we each need to do to deliver this? And I signed an agreement, I remember, this was a long time ago, we were probably 10 years ahead of time, with the Head of Borders in Hong Kong, with the Head of Borders in Dubai, and myself, I was Head of Borders at the Home Office at the time in the UK. Where we put a special gate in each of our airports and you pre-registered. It was the first ever seamless trial before e-gates, before everything, for registered traveller. And that collapsed for various reasons, and so one of the reasons I created [...] now, is to try to recreate that platform of communications. And so you will see at our events, we will always try to create workshops or opportunities on our website for those 4 key stakeholders to get together. You must have them all. And INTERPOL is also comes in as one under the Government Group as a very important IGO. That's why it's really important that you get out, you attend events, and you join organisations so that you can actually reach all of these moving parts. The other thing we've added that wasn't there before is academics. We think that there is a huge amount of talent in the universities around the world, you can now do studies, border studies for a degree. Of course you never used to be able to do that. And so we are now, we talked to Queens University in Belfast, Copenhagen University where we have students who will do research on borders. So for me, it's imperative. Nothing will work unless you have the control agencies, the transportation business and the tech companies working together behind a single vision. So the STJ vision that, that's why we've teamed up with WTTC. They are a huge travel companies, all the hotel groups, the Hilton Groups, the airlines, are all members of the WTTC. Their problem is they can't reach guys like you. They can't get to Interpol. They can't get to the UK Border Force. They can't get to see... What do they do? Who do they write to? How do they talk to you? And so that's we created [...] to create the framework. So we said well we can enable conversations for you. So we're now helping them, now they're talking to CBP, they're talking to CBSA, they're talking to [...] because of us. Because we created the border management and technologies association. So we have the links. Now we don't really need to do much more than that. I mean we just put them in touch with the Head of the Canadian Border. If they decide to run an STJ with the UK, great, we can drop out. But that's what I think is missing. It is this platform to enable those different entities to collaborate together behind a single vision. And if everybody's happy with it, if everybody can agree that this is a good thing, from border point of view, travel point of view, technology point of view, your point of view, security. Why don't we do it? And if you can get the right people in the room, you can make this happen. But if you haven't got all these people in the room, it's never going to happen.

Interviewer:

Interviewee: It was the SPT, Simplifying Passenger Travel. You might find it online, but it's quite old now, it's about 10 years old.

Interviewer:

Interviewee: Well that's when I saw you, when I saw you, where were we, in Warsaw, and I said to you hey Fabrizio, you are now a member of [...] but this is really valuable I think for organisations like INTERPOL to come to us. And then we can open up doors for you that you might find quite hard to open on your own. That's all we're trying to do is create a collaboration. Because I passionately believe the only way to manage borders in the future is through collaboration, you can't do it on your own. My inbounds, your outbounds, my imports, your exports, my risks are your risks, my issues are your issues. If we work together, we can fix this. If we don't work together, we're finished.

Interviewer:

Interviewee: Yes, absolutely.

Interviewer:

Interviewee: Ok well I think, I think the biggest challenge, and it's also a risk I suppose is that governments are very nervous about their borders. You know politicians are very risk averse to changing everything so you need to be able to articulate how the seamless border can be portrayed in communications to people as being just as secure if not more secure than the current process. Because people associate lining up for a long time and having their passport looked at by an officer with security. They think that the more the queue is longer, the more security checks are going on. And they don't understand what can happen behind the scenes. So to sell this principle, you have to be able to persuade not just politicians but the public, that the checks you are undertaking on implementing is not we're not taking down the border, we're not stopping the checks, we're not abandoning security. We are still doing all of those things, but they're not visible. Many people find that hard to understand Fabrizio. They say oh well I came through Dover [...], I just walked off the boat. No one stopped me, I

could've been a criminal, I could've been a terrorist. They don't realise they've been through the UK border already at Calais. You know because our officers do the checks in Calais. So I think it's public perception of being able to show that the seamless traveller journey is just as secure, is more secure, than the way we do things now. So I think public perception is one of the big challenge. I think the other challenge is collaboration. Most border agencies work in silos. They are 95% concerned with what is happening in their own back yard, especially here right now with Brexit. I was with Paul Lincoln yesterday, Head of UK Border Force. He is totally totally preoccupied with Brexit. He can't even talk about this stuff Fabrizio. I said can you come to Washington, oh [...] give me a break you know, I've got this happening in Parliament and this going on over there. And so most of the work in the border agencies is focused on the here and now. They haven't got the space or the bandwidth to think too much about the future. So those are the two problems in making sure that there's enough infrastructure in the governments for the future you know so there are people developing future programmes not just doing the day job. And that we can persuade the public that this is a good thing. But I think who can help us with that will be the tourism industry. Because everybody knows how much tourism contributes to GDP in EU, all the member states, in the UK, in the US. Tourism is now 10%, 11% of GDP so you want tourism right. That's going to bring you money, that's going to bring you jobs. So we need to use them I think to get the message out to the public, and that's another reason why I think the WTCC can help by promoting this.

Interviewer: Use of the passport in the coming years and checks will be performed throughout the travel journey via biometric

Interviewee: Well I mean I think probably not in my lifetime. I think we will always have the booklets. I think they will always be there because as you know Fabrizio countries are in different stages of movement towards towards biometric passports, e-passports and chips. So I can't see us getting rid of the passport any time soon. But I do know there is work going on in ICAO on this digital traveller credential. They've already issued some basic standards to countries, which means that you could have a digital traveller credential where all of the data that's on your passport chip could be replicated on another device and used in border crossing. So I do think what will happen is that in future, in the same way as you use Apply Pay you know to pay for services with your mobile phone, you will be able to acquire a digital traveller credential which will prove your identity, your nationality, it can have your traveller history on there. All the things that you have in the passport could be put on the DTC on the next generation chip. So I think you will see this gradual movement, you know it won't happen overnight, but in some countries with the higher value regular travellers who want a better traveller experience will increasingly be investing. I think Apple will want to invest in this, I think Android will want to invest in it. All the big suppliers can see the value of providing an app on a mobile phone which is the same as the passport. And I can see that happening in my lifetime, yes.

Interviewer: how do you see INTERPOL developing biometric databases of known persons?

Interviewee: Yeah well I can still remember vividly chairing a conference for Frontex in 2015 where this came up. And I can't remember who was speaking on behalf of INTERPOL but you had a speaker there who started to describe to the group, and the group that I had in the room were mainly border agencies EU border agencies, and INTERPOL said look we have this huge database of biometrics. You know we have images of global criminals in our systems. And we'd quite like you know to share them with you. You know because you could then, these guys are changing their names, they've got lots of different passports, but you would then you've got more chance of catching a criminal then you do now. And I said, I threw this open to the floor, and nobody in the border agencies knew what to do Fabrizio. They did not know. They said well if you send me these, well what would I do with these photographs, I don't know how I would deal with that. They haven't got a clue about how they would construct an arrangement whereby they could run biometrics against the biometric watchlist. So for me there's a huge gap, there's a yawning gap in borders on biometric watchlists. We don't have enough of them, particularly facial images. Because we're using facial images more and more now for passage. And you guys I know have got mugshots of criminals and if I could possibly find a way, if I was still at the border force, to get access to your mugshots rather than having to I don't know put a poster up in the tearoom that the officers can look at this guy on the wall you know 'wanted' like the old cowboy movies. That there was a technological solution so that people coming through my e-gates would automatically also be checked against your biometric watchlist. I would love to see that happen but as far as I know right now the border agencies don't have the technology to do that. I think it's a big problem.

Excuse-me I just have someone at the door Fabrizio. Just give me a minute, I'll be back in a minute.

Sorry my friend, that was someone delivering a parcel.

Interviewer: do you want to add something....

Interviewee: No I think, I think it's a really interesting concept. I think you should take a serious look at it over at Interpol. Because that challenge, I still remember it now and this is 3 or 4 years ago. You know but occasionally I remember things from conferences and I brought that back and I thought my god we're missing something here. If these guys have got photographs of criminals that are probably moving around the world for criminal purposes, why are we not using them at the borders? As far as I know we're not, unless something's changed. I think that's bad.

Interviewer:

Interviewee: Yes, now I absolutely agree with that. And not just at the crossing point but in the Visa system. You know on the ESTA system you have to send in your photograph when you apply for an ETIAS or an ESTA. You need your photograph if you apply for a Visa. So there's time time is not of the essence so much. Because one of the problems with the technology on one to n is it takes longer. But if you do it before as part of the booking process, then you got more time. And I would definitely like to see some trial you know maybe a snapshot of your most serious 100 terrorists, criminals, whatever you've got, is actually sent out and made available to border and immigration agencies so they could do those facial bashing. And as soon as you could catch somebody, then you can say it's valuable.

Interviewer:

Interviewee: Yes, absolutely.

Interviewer: do you want to add something?

Interviewee: No I mean I think you know I'm glad you're doing this work Fabrizio. But my message to you guys at Interpol, and I've worked with you now for many years now in different capacities, is that you have an identity problem my friend. People think you're the police. And and so you need to, whoever does your communications, you know your strategy

over there, you need to have a word with them and say look you know I'm happy to give your more feedback. I think you would find like you know if you were to send out a quiz you know what is Interpol, what do we do. Apart from your Lost and Stolen Database, most people would describe you as a police organisation, not a borders organisation. And therefore in some respects not so relevant in the border space as maybe the WCO or Frontex or other agencies that are clearly border agencies. I'm not saying you should give up your police role. But I think if you're going to do more in borders you've got to somehow demonstrate in your communications that you have got a section in INTERPOL which is dedicated to stopping you know to stopping you know bad people, bad things crossing borders. And I think that is probably your biggest challenge right now. I know you do that, I know you do it really really well. Because you come into my conferences but I don't think you know when people I go round a lot, talk to people, not everyone gets that bit. So I think that would be really good you know, a question for your thesis would be 'how does INTERPOL change its image so that it can be more effective and more recognisable if you like as a global borders you know a border agency enforcement agency, not just a police enforcement agency. That would be my main point I think.

Interviewer: Can be a question for the end of the research....

Interviewee: Yes absolutely. Well good luck with it. I hope it goes well. When do you have to hand it in?

8.6. Transcription / Interview F

Interviewer: Question 1

Interviewee: For me, border integrity is a very huge term. But perhaps it's because of my history in the United States that border integrity to me primarily focuses on screening people, documents, vehicles, goods, anything that crosses a border against known databases. For me, the screening of all of those things at the borders, air land and sea, is the most important thing for border integrity. Now that being said, of course border integrity requires more than just screening against databases. It requires human interaction to look for risk indicators like you would for human smuggling or human trafficking or foreign terrorist fighter identification. Of course there is a lot of crime that crosses the borders that is not in databases. So you need the human element to discover risk factors and possible identifying risks. So for me, those are the 2 biggest things. Screening against databases, so looking for known criminals, known lost documents or stolen documents, looking for known stolen vehicles. But also using training and expertise to identify things that are not yet known.

This is where INTERPOL comes in, you asked specifically for Interpol. Our strength are the databases. So INTERPOL enters the border integrity realm primarily through promoting the use of our databases at the border points. But we also do training for border officials on other crime areas to detect crime that is not yet known.

Interviewer:

Interviewee: Databases, databases, databases, databases, and more databases. Really like that's for me that's the number 1 through 9 for how we contribute our policing capabilities. Of course we have some other expertise like human smuggling and human trafficking expertise being trained to the border officials. But to be honest it's really really minor and small compared to the databases.

Interviewer:

Interviewee: If you're talking about really distant future, it's biometric databases, fingerprint, facial recognition, DNA and maybe iris-scanning. Those are the top 4. INTERPOL is really not close to providing those biometric databases to a systematic first line check today. It's years from now. And unfortunately for us, it requires countries to give us that data just like it does with nominal data today. But because of privacy laws it's difficult to convince countries to give INTERPOL fingerprint data, fingerprint data of its known criminals for us to allow those first line systematic checks. But I think in the future after we are long retired, that's the future. Having a name and date of birth is easy to mask, but you can't mask your DNA, you can't mask your fingerprint. Well it's not easy anyway. So that's the future of border security.

Interviewer:

Interviewee: It's technologically, it's lacking advanced technology also. The technology to search biometric data at the first line systematically is not available here at INTERPOL yet. We don't have those resources to give the countries. Some countries have it, like in the US every traveller is fingerprinted and those fingerprints are checked against all known fingerprints, not just against the traveller's fingerprint, but millions, tens of millions of known fingerprints are searched for a match. And for fingerprint biometrics at borders, that's the current avant-garde future. But now it needs to be expanded to DNA, and all of the other biometrics that people are more afraid of. You know the especially in Europe with the protections for privacy. A lot of European countries are really scared about using biometrics like DNA and facial recognition at the borders, because you are searching innocent people, well you assume that they're innocent until proven otherwise. In the US we take a different approach to that. We don't assume that you have a lot of privacy when you're trying to cross the border.

Interviewer:

Interviewee: Definitely expanding i24/7 to every border point, so that systematic 100% of passengers and documents and vehicles are screened against the databases at every border point. That's the current-day goal. That's extremely possible today. It's not, it doesn't require futuristic technology. It's possible with enough money and enough support from the member countries. I even say it's relatively easy to accomplish that. So I think short-term that would be the goal is putting a lot of effort, getting money, and campaign to expand simple databases, non-biometric databases, name, date of birth, passports and vehicles. That's it. That's the short-range plan. Long-term we can talk about biometric databases but that's a decade or more in the future.

Interviewer:

Interviewee: I don't know the 11 points specifically. Unfortunately I have to be an expert in 194 countries so I don't concentrate on Europe. I try to understand Africa and Asia as much as Europe.

Interviewer:

Interviewee: So for me the integrated border management approach, if it could be summarised in one sentence, is getting everyone to work together. And that is definitely a problem in Europe that I've seen during operations where, for

example, customs might not be even law enforcement and they don't work well with the border police or immigration. And the regular police might not work well with everyone else at the border points. So for me the most important thing in Europe is to get everyone working together preferably on the same team, and from the US perspective, I've been working now for more than 20 years, and I've seen both methods. When I first joined the police in the US, our immigration and customs were completely separate agencies. They weren't even in the same ministries. And they did not work well together. So a lot of crime was missed and it was a problem. After 9/11 they were combined into the same agency, now US Customs and Border Protection, so it has customs and immigration issues and typical border policing all in one. And now it works a lot better. And I've seen the same things in other countries around the world, where the different border authorities are all under the same ministry or under the same administration. And that to me is the first step in really improving the integrated border management approach. But even in countries where you can't do that, where it's just not possible, you have to find a method to get everyone to work together on the same crimes, to prevent the same crimes. So that means they train together, they need to do operations together, they need to take legal classes together. Everything should be together as if they're the same administration. But they specialise in their own areas. To me, that's the most important contribution that INTERPOL can give. Because really we focus traditionally more on the police side, not on the border side. So we have the ability to bring the right people from police to the border environment in training sessions and in operations.

Interviewer:

Interviewee: Making connections. Now this might not be as important in Europe where overall there's good communication between agencies. But this is extremely important in Africa, Central Asia and the Americas where the different agencies often will not talk to each other. Even in the same airport, customs might never work with immigration. And they might not work at all with the Narcotics Police. Getting them all to work together is step number one.

Interviewer:

Interviewee: Well positively and negatively, we have to work through the national central bureaus which are almost always traditional police agencies. So this is good and bad. It's bad because the traditional police called the national police might block our cooperation with the border police if they are different. But positively, if we have to work through the national police then there's a natural bridge between the police and the border police or in some African countries the borders might be just controlled by the immigration service. So it's a natural way to get the police and immigration or police and border police to work together.

Interviewer:

Interviewee: Well it's technological also because in a lot of countries there's no INTERPOL communication system at the borders which makes INTERPOL influence impossible. If there's no technology that allows for the immigration databases to be searched, then it's impossible for the border officials to use INTERPOL capabilities to fight crime. So it is, it's all of those. It's technological, which is the easiest to solve. It's relatively easy. Our technology extensions to the borders don't cost a lot of money, they don't require super-secret or fancy equipment. It's a little bit of money and some technological assistance. There's usually donor countries that are available to do this. So the impediment, you know that word, the thing that stops the technology, is usually the policy. So I find that the usual problem is policy and legal. You really can't blame the technology because the technology is easy. It's the will of the country, the policy, the decisions by ministries perhaps, and the laws.

Interviewer:

Interviewee: Ease of travel, but for me the digital travel must be supported by a verifiable security element like a fingerprint or DNA or iris. I think security-minded countries will not accept a completely digital, gate-free travel experience without those biometrics in place. I can't imagine that the United States would ever allow completely digital travel without seeing an officer, without giving a fingerprint, or without giving DNA or iris. It's just not possible in today's world. So the digital travel must include a secure form of putting biometrics onto the digital travel identity, that can be verified by the destination country, possibly in coordination with the origin country or the airline, otherwise it won't be in the near future. Now, that's extremely possible with a digital travel portfolio or a digital passport if you will that includes biometrics. But that's the only way it's going to happen in the near future, if it includes secure biometrics. Countries like the US will not accept a traveller that has no secure biometric check. So I suspect that even this digital traveller identity will require the traveller to provide biometrics at the border. It won't be a completely pain-free experience. Even in the best case, the traveller will have to go to an automated border control gate, give a fingerprint or look in to get iris scanned to compare against digital identity.

Interviewer:

Interviewee: No. Well ready mentally, yes. But ready technologically, absolutely not. We need, going back to my answer before, we need to have the biometrics in our databases to be effective. First of all, the technology of housing biometric data is more complicated. It requires a lot more storage space, and transfer rates need to be faster and larger. But then you also have to convince countries to give us the biometric data or at least have us as a hub to connect countries together between biometric databases. If a country, let's say, a European country does not want to give us their biometric information, we at least need to be the hub to connect the country that wants the information to the country that has the information. So if a traveller is going from France to the United States, the United States wants that biometric data. If France won't give it to Interpol, then we need to be able to connect the US to France between their databases.

Interviewer:

Interviewee: We can be a communication hub between global databases without actually housing the information.

Interviewer:

Interviewee: Yes of course. The private sector drives the technology. Well mostly drives it. The governments are not creating the technology for this, the private sectors are. The governments provide money for the technology, but the technology is being created by private companies. So if the private companies see that there's a global appetite for more and advanced technology, then they'll create it.

Interviewer:

Interviewee: Yeah, that's the ideal. Of course it's essentially what a Visa is in current day. The Visa contains biometric data like a fingerprint, that is compared in advance to databases and when the traveller is moving, that biometric data is

compared to the traveller himself when he arrives. So we're already doing it in a way. But eventually, yeah, API will be biometrics also so that the country can check the fingerprints of the passenger who just boarded, instead of waiting until he arrives. Absolutely. And I think that will happen sooner than a lot of the other things we're talking about. Because it's relatively easy. You do it, you give a fingerprint at check-in or at the gate, and then that information is transmitted and ideally you have an interactive API where the fingerprint is checked against known databases and you have a board or no-board decision. So I think it would be great to have a fingerprint scanner at the check-in booth so that you give your fingerprints and that's transmitted with the API information. It saves countries a lot of money, a lot of time, and is great security. I mean the passengers will have to give fingerprints anyway when they arrive. So you're not taking any biometrics, no additional biometrics, you're just doing it earlier.

Interviewer:

Interviewee: I think there will always be a verification of the identity at the destination. Even if it's very fast, you know a fingerprint comparison today only takes one second, you know in 10 years it is a meaningless amount of time. But I just I can't imagine in the next 20 years let's say that countries will accept passengers without any inspection.

Interviewer:

Interviewee: Well that's already, that's already happening with API and PNR with algorithms on PNR and API data. So is that what you're talking about? You're talking about...

Interviewer:

Interviewee: So doing risk analysis, algorithms but with biometrics. It's a good question. It's your first question I have no answer to. Well there's no real good answer to that because biometrics naturally don't have a profile unless you start abusing religious, ethnic profiles. Because if you're profiling using biometrics, then you're running a risk of identifying people by race, religion, colour, and we don't do that. So there's really no algorithm for using biometrics in advance, other than databases which are not risk analysis, it's not algorithms, it's just a one-to-one check right. So the only, the advanced searching of biometrics is just comparing the biometrics to known database entries. I don't think there's really... there's really no risk analysis. It's just comparing data to known data.

Interviewer:

Interviewee: Sure, but that's not biometrics. That's who you're travelling with, your route, your credit card information, your previous purchase, previous flight histories, all of that, but it's not biometrics. When you starting getting into algorithms for biometrics, you're entering a dangerous territory where you're analysing and possibly abusing human rights issues. So I'm sure our friends in some countries would love to do that. I'm sure that some border police would love to know if someone is Christian or Muslim or something like that before they arrive, but obviously we don't like that. It's radio not television so.

Interviewer:

Interviewee: Well I don't know, it could miss. Well certainly the faster you process passengers, the more likely you will miss risk indicators. Right if the border police officer spends 2 minutes with a passenger asking questions you're more likely to discover fraud and bad intentions than if you spend 5 seconds with the same passenger. So of course the shorter the interaction is with police then the more crime you will lose, the more that you won't discover. But it's a cost-benefit analysis. It benefits the country to increase the passenger flow. It saves money, saves times, increases passenger happiness, more money for the economy in the destination country. Airlines like it because they can move more flights. So it's just simply a cost-benefit analysis. Some countries, they don't care about the cost, they only want the benefit. And so they spend more time with the passengers. But I think all progressive countries are looking to speed the process and to spend less time analysing each passenger. And it's the known threats that INTERPOL really helps with. And that luckily is the easiest threat to counter, because it's databases. And searching people against databases takes no time at all. Takes very little money, takes no time, it's easy, computers do it. So what INTERPOL gives to border security is the cheapest, easiest and most secure form of border security. It's not the only important one, but it's a good one.

Interviewer:

Interviewee: So to be honest with you, I'm not an expert in data standardisation or sort of the behind the scenes technology of the databases. But I know enough that we have to promote the data standardisation to increase the contributions to the databases. So for me the ultimate goal is to increase the contributions to the databases and to increase searches of the databases. And the data standardisation helps with both of those. So my very little knowledge about this. I at least know that it's an important topic that contributes to the ultimate goal of more data in the system and more data being searched at the borders. So unfortunately, I don't have a great answer for you.

Interviewer:

Interviewee: I think the role of the border guards has already changed and will continue to change because of this. Like, look how many border guards now are not even at the border but they're in passenger information units or they're in analysis units that could be located anywhere in the country. And the only job of those officers is to look at API and PNR data, and other information coming from open sources, doing data analysis. They're not ever at the borders, they're not actually talking to the passengers. But those officers are actually doing as much or more for border security than their counterparts at the borders. I would say that the investment in passenger information units and analytical units far exceeds the benefit of spending money on additional officers at the borders.

Interviewer:

Interviewee: It's less important today compared to 50 years ago. Today we get more hits, and we find more criminals using analytics compared to actual in-person analysis.

8.7. Transcription / Interview G

Interviewer: Question 1

Interviewee: Ok, so, first, I will start by saying that in ICAO we have also a strategy projected which is called 'Security and Facilitation'. So of course from the point of view of ICAO, when we are talking about security, it is of course aviation security. Now when we talk about facilitation, it is of course also air transport facilitation. And this is of course involving a lot of agencies into a state. And based on what is Annex 9 facilitation, which does not mean really something for someone external. But when we are talking about facilitation, it involves both custom, immigration, world health, sorry health agencies, quarantine, custom borders etc. So from my point of view in fact, based on our strategy project, is the border integrity concept, it means that we need to ensure that borders are (03,23) against any threat should it be safety security, but also from the economic point of view. But in the meantime, it has to still be open to facilitate the movement of legitimate legitimate people and goods. So now we can say what is exactly the definition of legitimate because basically we don't have that in any of our annexe, what is legitimate. I would say that we can replace that by the majority of the travellers, ok, let's say that 95% of the travellers are... we should facilitate the movement of these travellers. So there's a threat to border integrity, so it can come of course from from the economic side, as I said, international trade growth. But also from global migration, from, going from drug, human trafficking, which is a really hot topic. As at our last facilitation panel, we have now a dedicated working group working on that. To organised crime, migration crime, smuggling, terrorism, fraud etc. You know that for terrorism, basically ICAO is very very well, is very involved in all the UN security resolution related to terrorism. Fighting, struggling in fact, against foreign terrorist fights. Through the tools that ICAO has in her hands. Then I would come back perhaps on this human trafficking because it is not so easy when you are talking of human trafficking into, when you are into a plane. And we have for instance a dedicated training for the cabin crew, to detect very, how to say, people which are, seems to have, something strange in their behaviour. So we have developed such a training. I would conclude by saying that in order to ensure border integrity, we need to have really a national coordination in place, inside a state, with all the agencies involved in the different types of crime. Because here we are talking really about different types of crime, but we need also to have a very good international cooperation, strictly with other states or with other international organisation. And of course in order to ensure secure border, we need to have the appropriate tools. Such as technology, risk management, information-sharing etc etc. So that's for me the border integrity concept.

Interviewer:

Interviewee: Ok, thank you. For, for me, INTERPOL has a full range of tools, system and tools, that are really important for border integrity. And of course for us here in ICAO I would start, we start by the operation database, but for us, one of the most important, it is the SLTD database, because we have a dedicated standard in Annex 9 on that. But also other databases should charge the notices colour-coded system of international (7,59). Another one which is important for us on the database side, it is the foreign (08,09) database for a second-line inspection. And here I would focus on the (08,12) database which help to identify fraudulent travel document. But also the database on biometrics such as single-prints or DNA profile. Here I would make a small parenthesis because for the biometrics what is really mandatory in ICAO standards is only the photo of the traveller. The fingerprints and the iris scan are only, how to say, not mandatory so to speak. And choose to add them not. We of course we don't touch the DNA profile for the moment. And now there is also, from what I know, the integrated border management taskforce of INTERPOL which helped to enhance the international cooperation that I was talking before on border integrity. And really I insist that this for me, this integrated border management taskforce, is essentially to ensure an efficient border control management. So efficient means that we are going to ensure border security by, by finding which traveller is, can pose any problem, and by facilitating the movement of the others.

Interviewer:

Interviewee: Well I am really aware and not aware. I don't know into the details. I know what is, why it has been established. But it's fine for me, let's go to the question 3.

Interviewer:

Interviewee: Ok, for us in fact, in the context of our ICAO traveller identification programme strategy, which is in fact available for each mode of transport of course. It is exactly the same processes that should be in place to ensure both security and facilitation. But one of the elements of this trip's strategy is interoperable applications. And recently during a council session, it was stressed again by some council members that all states should ensure that they have in place interoperable application or technologies as you want, in order to facilitate the movement of the passenger of each state. So for that, in fact, what I think is that each state should first ensure that they have a strong identity policy in place in order to have a robust breather documentation. Because if you don't have robust breather documentation, this will put in danger the security of your travel documents. Then the travel documents should be compliant with the Doc 9303 specification for machine-readable travel documents. And here I would put also a parenthesis because in fact as you have more than 50% of international tourists which are travelling by air, in fact, all, ICAO has the leadership on all the travel documents used should it be by air, sea or road. That's why we have this specifications for anything. And if the travel document is compliant with this specification, this should ensure the interoperability. Then for the state, they should have in fact in place the technological tools enabling first to read, to read the, the travel document in order to extract the passenger that has advanced passenger information. But also the technical, the technological tool to analyse what could be provided to them by the airlines of passenger name record data. Because it is a huge huge number of data. It is really big data. And this requires of course a higher level technology, but also a dedicated human resource expertise in order to have a good analysis of this data. Finally, if I end from the political aspect, I think that each state should nominate a single agency to collect information received by the other state. And to dispatch them to the appropriate stakeholders as I mentioned before. There are a full range of different stakeholders which are not under the same for instance minister, department or whatever.

Interviewer:

Interviewee: In fact, in our interoperable applications, we have a list of interoperable applications. And among this list there is the SSTD database. That's why it is important to have this global interoperability in order to allow at the end to compare the data collected from the travel documents to the INTERPOL SSTD database. That's where, I spoke today at least, we have, we rely heavily on our cooperation with Interpol.

Interviewer:

Interviewee: As I mentioned before, for me, the collaboration I spoke today is through the SSTD database. But from what I have seen and what I know in fact, we have, if we, we rely on this seamless approach, at least in the area of civil

aviation, international civil aviation. We have to rely on stakeholders, different stakeholders. These stakeholders are for instance airlines, that ensure that the passenger travelling has the right travel documents, allowing him to travel. But as well as to have the Visa if need be. In order to be able to collect the API. And the API is part of this interoperable application. Now, through this collection of API, which is sent to, should it be interactive API or API. It is, it can be sent either before, for interactive API, before the departure of passenger, and for API, to the state of arrival of the passenger. And for that, it is, for that it is important also to link these data to the SSTD database. Another stakeholders which can be involved in the seamless flow is of course airport. And also airport which have to, they have to work very closely with the border control agencies and the security providers in order to allow a seamless flow. Now in the whole travel journey in the airport. And this needs for the airport to have an appropriate infrastructure. I don't see really here how INTERPOL can work with the the airport. So I am not sure that I have answered your question.

Interviewer:

Interviewee: Well first, from my understanding, you, INTERPOL is already collaborating with airlines in project of 'I Check It'. And this is of course helping the work of ICAO in order to ensure that our standard and recommended practices are followed. Now if we go to what we are currently developing and what will be, what could be, the future. In fact, ICAO is currently working on a seamless concept which is called the Digital Travel Concept. Why we are willing to establish in fact governments and specification for that because we are seeing that a lot of parallel, parallel project are moving on. For instance, the Known Traveller Digital Information, KTDI concept of the World Economic Forum which is now in experimentation, experimental phase with 2 states, Canada and Netherland. But also with Iyata, with their 1 ID. So that's why we are trying to make a kind-of global, global governance for any new movement. We are not against that movement, but I think that we should, we are here to ensure that we are going to have secure and also to facilitate travel. So the digital travel concept, we have looked at different model, should it be blockchain, smart device etc. But we have chosen for the first step, we have as usual the digital travel concept, the one, and then DTC 2, and then the DTC 3. So short-term, medium-term, long-term. For the first step, we have chosen to start to have the hybrid model which will have both the virtual token which can be on a smart device such as the smartphone. But in the meantime to continue to have the physical passport in case there is any issue with the digital. And the our objective was really to ensure that our model is providing the same level of security than what is provided by an e-passport. And for that it is important to have still again the link with, the, when we will have interoperable application. The link between the virtual token to the INTERPOL SSTD database. And to ensure that the virtual will be correctly linked to the INTERPOL SSTD database.

Interviewer:

Interviewee: So first, I would say that regarding any travel document, the standards are developed by ICAO, as per today, we continue to be developed by ICAO for travel documents to be used by air, sea and roads. For that we have the necessary standards and specifications, and we will continue to adapt to, to how to say, the way, the way travel is evolving. Now regarding the global repository, I would say that this would be perhaps possible in the long term when travelling with digital will be the majority of the case which is really for, as per today, not yet the case. And I am still thinking that the physical passport will still be there for, until the next 30 years. And I would like to recall there that issuing biometric passport is not an ICAO standard. It is not necessary for a state. What is really mandatory for a state is to ensure machine-readable passport. But now the the barrier of establishing such a global repository is linked to data privacy. For instance, here in ICAO we have a global repository of the country signature in the e-passport, in the e-passport yes, which is called the ICAO Public Key Directory. But for the ICAO Public Key Directory we have, we have a memorandum of understanding with the state that we will not have access to any, any private data related to a traveller. So and this is really the main concern that I may have to have this global repository. Which means that who will be in charge of managing such a global repository. I have no idea about that. And in case, whatever, what could be decided, but for me, I think that INTERPOL is really well-placed to have this kind of repository because you have already bases with the SSTD database so you could be, INTERPOL could be the right place to have this global repository, while we will continue to work together in order to ensure that the harmonisation of the digital traveller credential will be still under ICAO umbrella through the work of the (28,58) and the new technology working group work which is working in cooperation with ISO to define specifications for all what is related to travel documents should it be virtual or a physical one.

Interviewer:

Interviewee: I really think that, I don't that ICAO is the right place. It is not, I think that from my point of view, it should be under INTERPOL overview and facilitating the exchanges of these information. I think that we have already a lot to do to promote our ICAO Public Key Directory, we have only 55 members, so let's focus on each what we have to do.

Interviewer:

Interviewee: Well, I think that recently, I think during perhaps the last trip's symposium, I met with a director from INTERPOL with [...], and really we have expressed the same concern regarding the lack of governance of these private initiatives. And we have already mentioned to the World Economic Forum. That's why we have invited them to be part of the (33,50), that they perhaps they don't have to reinvent the wheel because there is already a regulatory framework set up for traveller documents and that we should really work together in order to ensure that we continue to have a secure travel journey. Now how we are, for the moment I think that we have convinced Iyata with their 1 ID, 1 ID project, to be in line with what we are currently developing with DTC. And by the way, I will have an informal briefing on the DTC to our council next Wednesday afternoon with our experts. And we are expecting to have the DTC specifications which are worked by ISO by the way, to have them ready by mid-next year. Based on that, and what the experimentation of WEF will give, I think that we will need to sit together and to see how we can ensure that all the, all the different initiatives, should it be at the private or public level, are entering into the global governance that we are setting. Now for instance if we come back to the privacy of data, if we take the example of the Passenger Name Record Data, which are collected by the airlines, It has been recently raised to us as a major issue during the High Level Conference on Aviation Security by the United States regarding the importance of having these Passenger Name Record Data in order to analyse notably the travel of foreign terrorist fighters. And for that, since then, so ICAO has put in place a PNR taskforce in order to see how we are going to establish a PNR standard as we have already an API standard. But also we should have standards in order to ensure the right to data

privacy for each passenger. So that's where we stand in terms of our, how to say, steps, and how we are planning to, how to say, to have everybody, all the stakeholders on the same path.

Interviewer:

Interviewee: Well I think yes it is a good idea but for that we have you know formal processes. And what I suggest, and I will keep that in mind, is that in fact for the next facilitation panel which we will meet in 2020 we have 2 permanent observers in this facilitation panel. We have IATA and ACI. But for each specific meeting, we can add observers that we would like to come and to present some new aspect and I will keep that in mind in order to ensure that INTERPOL is invited for the next facilitation panel. It could be first established as an observer and then to have a working paper from you offering this possibility and explaining how and why it should be updated.

Interviewer:

Interviewee: I think that as I mentioned before, for us, from the ICAO point of view, we have of course the airlines and the airport which are entities outside, at least airport outside INTERPOL reach. But I think that I have already mentioned that you have already would cooperation with airlines through your 'I Check It' and this of course is benefitting our mutual cooperation between INTERPOL and ICAO. And as I mentioned also that perhaps for airport, and I think that they have a dedicated programme which is called Next, I don't have the details to give you that but perhaps this could be one of the idea that you can explore to see how in this project of ACI, which is called Next, how INTERPOL could fit, but really here I don't have all the details to help you.

Interviewer:

Interviewee: ACI, Airport Council International

Interviewer:

Interviewee: Yes, they are always speakers in fact. And they are also observer at the (43,34), as INTERPOL also, but they are also observer at the facilitation panel. Sorry to interrupt you Fabrizio but should leave in 5 minutes.

Interviewer:

Interviewee: Well I think that, I think that, the smart border, the smart border and the seamless border concept, they have both the same objective. That's my understanding. Both the same objective which is basically to enhance both security and I think that smart border perhaps is much more linked to, perhaps I have wrong information, but it is perhaps much more to struggle against illegal immigration for instance. While the seamless border concept, it is much more for me related to travel facilitation, and really to ensure that there will be a seamless journey for, for the passenger, from the beginning. And when I see the beginning in fact, it is since even the first day where the traveller is going to ask for his passport, or whatever it is, his travel document. Then when he is purchasing his ticket, when it is always requested, but it is not mandatory of course to enter your personal data. And for me really the seamless is much more related to travel facilitation.

Interviewer:

Interviewee: Well for me, the risk is of course reliance, heavy reliance on technologies and all related issues. For instance when you are sometimes, when you are travelling through, going through automated border controls, it is not working. It happened to me recently when I was to New Zealand. They are asking some questions and I have answered wrongly to one question, so I was denied. And then you have to go to the second line, not the second line, but to the officer. Hopefully I will not be there, at least not today. And then I will compare that to an image which is related to aviation. You have into a plane the autopilot, ok, and you can manage all your flights through the autopilot. It is only the decision of the pilot to set up the autopilot to land or to land it by himself. So that's, that's the existing of the autopilot in the plane. But there is still a need to have 2 pilots on board. But that's exactly for me related to the risks of the future seamless border concept. You cannot go only with the technologies, you will still have the human touch needed.

8.8. Transcription / Interview H

Interviewer: Celine, very quickly, you received my list of questions. As I wrote to you, it will be very flexible interview. So I don't want to follow exactly this list of question. I think that when there is something that we see is needed to be a little bit elaborated more, we can do it. If there is some question that for you is not, is not known, you can simply tell me 'I cannot reply to this question'. What I would like just to ensure is you can, what I would like to know from you is what you expect from Interpol, what do you expect INTERPOL can do for IATA, that's the focus of my research. Ok, so if you can keep always this in mind, so it's exactly what you see INTERPOL can do to improve your job. So let's start from the first question which is indeed a question that come at the very end after I had already started on my elaboration, which is the concept of the border integrity. Interpol, 1 year ago, state that the organisation will contribute to border integrity. And then when I went to try to understand this concept of border integrity, I didn't find exactly the terminology and meaning, so I would like to know from you what is your understanding and your interpretation of border integrity, if you have one.

Interviewee: I found this question very interesting when I opened the document, it's a good one. I mean, to me, the, so, that would be my definition, not IATA one, because we wouldn't have one either. But it kind of 'border by design', I mean if we can maybe make a comparison, it would be for countries to embed in technology and the process, the rules and regulations they have regarding border and so making sure whoever is not allowed to cross the border is detecting or alternatively whoever is allowed to cross the border without severe check can go through more easily. I think this, they might also have a sense of connection or integration with, with other countries, I mean if we look at IATA at a more global level. On this one I would be very interested to see after your research if you come up with a kind of definition that stakeholders agreed up on or have a good sense of.

Question 2

Interviewer: Ok, thank you very much. We will see at the end of this elaborator what we can, what I have found. Now we go to the next questions, we will have 2 sections indeed. One is more dedicated on Interpol, and what INTERPOL is doing now for border, and the second section is section 3 in the list of question I sent to you, is the future in border management, focussing probably on the concept of seamless, the seamless concept. And the use of biometry at border. And

again what INTERPOL can do to contribute, and to facilitate mostly the activities that is performed and undertaken at IATA. First question is based on your collaboration and experience with Interpol, what are the current INTERPOL border capabilities and what kind of contribution they can bring on border integrity.

Interviewee: Yeah, I think, I mean more generally for us, for the organisation, and for allies, the role of INTERPOL is very important in a way that they support member states, individual member states, in building their border security capabilities. So we often refer to the Multiple Database that INTERPOL offers. One of the most important one so far is, is the SLTD because also carriers have this obligation to check travellers' document so if they do so, they also expect member states to keep track of stolen and lost document and ensure that the information carriers transmit to government is properly used and efficiently used. So obviously if they are connected to INTERPOL databases, including SLTD, that's where you have a real added value for carriers. So that maybe does not specifically just enter your first question but more generally on this section as we don't necessarily have a direct connection between carriers and Interpol, but more through the member states.

Question 3

Interviewer: Ok, that's clear. My second question is most on the concept of integrated border management. When I thought about this question, I was thinking about Europe indeed, and the new legislation on border security. But I think it's something we can discuss as well because the concept of integrated border management basically is a global concept. So again I would like to know from you what is again the role of INTERPOL in an integrated border management. What are the stakeholders that INTERPOL should have let's say dedicated collaboration to improve border security, and again in the integrated border management, what could we do to facilitate airlines in ensuring the highest level of aviation security.

Interviewee: Yes so in terms of facilitating or strengthening the border security process, I think its very important to have INTERPOL solutions integrated into the government passenger data systems. So if we are talking about single windows, or if we are talking about single entry points for API data for instance, it's important that the countries link, I mean, integrate INTERPOL solutions into their system. So thereby automating also the check of the passenger against the available databases. It also requires states to have at least from ideally, they should have interactive API system so the carriers are not in fight right away whether the passenger poses a potential threat or if there is apparently good to go. And it's where the airline can get the benefits of sending also the API data because one point to consider also is as the collection of PNR and API data by member states is becoming mandatory and that carriers are complying with the new request. It's basically just cost for carriers. I mean they have to establish the lines, they have to make sure they can send the information in the proper format at different time, each country has its specificities. So at least the minimum benefits carriers can have is this guarantee from the states that any passenger they bring on board is not a threat to the safety of the aircraft. So the integration of INTERPOL solutions into the member states' system is key there.

Question 4

Interviewer: Ok good, thank you. Third question is more strategical question. Because I would like to know what would you consider the main strategic priority areas to be leveraged by IATA and other international organisation, even by the member states, agencies that have responsibilities in border and aviation security. And I made the example of policies, budget, capacity-building and training cooperation. What are for you the most important areas in which INTERPOL should be engaged as player in border and aviation security?

Interviewee: There are several aspects. I think one is to make sure INTERPOL databases remain relevant. So it's very important to keep them updated. I think one of them, we know the challenges of it, there may be also a need to check if all the crimes of person we would like to stop maybe potentially, mean addressed through some addressed through some INTERPOL databases. There might be a need to evolve. And I think technology is, technology I would, technology and information-sharing that goes also with cooperation, are so crucial because we see that not all of the countries have the same capabilities. So there might also be a role for INTERPOL to try and fill those gaps. Maybe by enhancing collaboration, cooperation between between states. Or playing the middle man in-between. I think INTERPOL has this credibility and member states know that they can also rely on the agency. So that could be a role as well for INTERPOL to maybe play more, because I guess you already do.

Question 5

Interviewer: Yes, that's true. That's also something that I, the same feeling I had from the other persons that I have interviewed. That by the way, you know most of them because it's in our environment. Next question, this is I think easy to respond, because I think it's most challenges that you have, you have seen in establishing a more formal collaboration between INTERPOL and IATA, since it's here we try to at least to create a basic general agreement and we don't, we fail anytime. This is just an example. But what are the challenges for you, aside the creation this general agreement. You see some issues sometimes to enter in collaboration with us, or you see that everything is running smoothly let's say?

Interviewee: No, I think that the challenges that, because, we are, I mean we don't have a direct relationship in the operational field. There is the member states between us. So we might have sometimes the tendency not to. I mean we would mention I mean on our side, from my standpoint, mention INTERPOL's capabilities but maybe not to the extent that we should or. And I, I don't think that there's particular block road, I think that it's because of the operations, and because we are not your, your, INTERPOL is not an organisation we deal with on an everyday basis. We are more asking the state to use your capabilities. So then maybe the communication is not as regular as it could be. Nonetheless, I think we have good and open establish channels. I don't feel that we, we cannot reach you when we need.

Question 6

Interviewer: Ok, thank you. So let's move on on the next part of the interview, which is the most heavy, but it's also, I think the most interesting for you, because it's a jump into the future I would say of border and aviation security. My first question is what are the different implemented or that are subject of an existing evaluation study to balance facilitation and border security. This is your matter.

Interviewee: In terms of seamless passenger flow?

Interviewer: In general, not only, seamless probably is the most changement, but even better use maybe of the current technology because basically we have already technological system that would be capable to manage biometric information or to automatize as much as possible the, how to say, the passengers but it's not used maybe. Also I would like to know from

your perspective, so something that is already existing, that you think is important to expand everywhere. But also about the future. When we talk about the future, we can start to think about the seamless concept.

Interviewee: I think the, already the increased use of API data when properly used by member states, when they do the appropriate check, is good to preselect passengers that need to go through a secondary screening. So this is, I would say, a first step, and with the interactive API they can even go further and I would say that for carriers it's much better. Now they I think developments in the US that are very promising. I am not sure they could be duplicated because obviously it requires quite some investment. But first in terms of the validation programme, whereby every foreigners or person having another residency etc., is recognised before entering the territory. And that allows the facilitation of the passenger while increasing also the security behind it. It also obviously I mean, each of the incoming passengers need to have whether a VISA, or ETA, or it could be a permanent residency card etc. But then as the US government is cleaning up its databases, every incoming passenger is identified in one of the databases. So I would say probably also contribute also to the definition of border integrity where you have information on everybody who's coming. And at the meantime, they are implementing the IDS solution, so the US CBP acts as ID provider and they have developed the TVS system whereby foreigners are also recognised through biometric matching of their face. In terms of facilitation and security, we think that there's, there are some gains there in using this system. As they provide the, the identity also, airlines can decide to use this service to perform their, be it their boarding process or their check-in, even perhaps they can use it for airport access. So private stakeholders can use this public-developed solution, which is very promising in the way that, because the government provides the data, there is no need for industry stakeholders to re-check the information or to ensure the validity of this data because it's done by the government. And definitively, it improves passenger facilitation. So I think those are developments that we are looking at. As they are really promising. And although we acknowledge that it will probably not be a solution that may be reproduced in every country, at least it could be done in a number of others.

Interviewer: Let's go a little bit more in detail about this, because it's very interesting. I am also elaborating a lot on this. You said something that I never heard before: TVS.

Interviewee: TVS, it's Traveller Verification System.

Interviewer: TVS, ok, But it's kind of, it's similar to the Trusted Traveller Programme or it's something different?

Interviewee: No it's different in a way that it's applicable to everybody. I have a paper that I can share with you after, it's a public one, with some information about it. So once the passenger has been, the identity of the passenger has been, ah sorry, the biometric of the passenger has been captured once, so at border control, then CBP keeps a record of this image. And every time the passenger will cross the border, in and out, they they will add the new picture to the gallery of this person. So in practice what they do is, for instance for entry or exit flights, let's say from Atlanta to Paris, the airline would send the API data in advance to CBP. So based on the API data, CBP would extract the images of the person linked to the API data, and put them in a cloud. So once the person arrives at the airport, and I think Atlanta has one of the most advanced passenger process there, but already at check-in, they can be recognised.

Interviewer: Based on the previous images.

Interviewee: On the face, yeah. Because they know that this person would arrive somewhere between 2 and 3 hours before the flight. The people, the cloud, are based on the flight number. And it's also very efficient in the way that, and I think I mean, CBP was forced also to fund solutions when they were mandated to implement exit programme because they didn't have to put the manpower to man kiosk for exit border control. So what they are doing now is that they combine the exit border control together with the boarding process of the airline

Interviewer: So it's combined with the airlines. I remain again on this. If I understood what you are saying, this programme does not foresee, let's say, collaboration by the passengers. I mean the image is captured, but not, let's say, on a voluntary basis. Or, because what I understood from the other Trusted Traveller Programme, that also is managed, I think also by airlines, there is this trust of the passenger in sharing personal information, including biometric. In this case, apparently there is not this collaborative element by the passengers.

Interviewee: No, but they are different in the way that for the Trusted Traveller Programme, it usually applies to nationals. And for instance in US, they can't take the, capture the biometry of the nationals, unlike the GVS system do not apply to nationals. But it applies to foreigner. And if you had a kiosk, you would have to go through an agent, give your fingerprint, I mean, show your face and your face would be captured. So in the same way as you would do it at a kiosk, it's done through a camera. But that's for foreigners. And I think there were also concerns from the Congress last year about what should be done with the biometry of US citizens. So this was really, in terms of data privacy, the question was more about US nationals.

Interviewer: And going to the next question. I'm wondering now how this kind-of system could be linked with airlines. You said already in the US, in outbound, there is no, there is this collaboration let's say, between the security-check performed by the aviation industry, and CBP. Do you want to add something about the collaboration between governmental agencies, governmental and public agencies, and the private, in your case maybe the security units, the security department of the airlines.

Interviewee: Just on the previous question. There is a way to for passengers to opt out. But they go through manual process which is at the end of them. But they are, they to my recollection, there's this option. In terms of collaboration, we see that if countries, I mean several countries, were to develop similar solution, that would be very, I mean, much easier for carriers. Now the complexities that every countries is, well in different countries we have different solutions that are being developed. So in US it might be government-driven. In another country, that might be airline, private or airport-driven. So we'll have different solution that we have to make interoperable at the end of the day. So that would be the challenge. If we focus on the US solution, the identity as a service. Now I think it gets to my comment about the fact that airlines, although they were a bit sceptical at the beginning, our members who've tried the system really love it, and we see that in the future there's also an opportunity to maybe shift the liability about the check of the passenger identity from the airline to the government. And after the call I will send you a paper that we have written with CBP and the IAG Group also which is BA, Iberia etc. and looking at how the system could work on US, UK flight and how the liability could sometimes shift in the future.

Interviewer: Ok, that would be very interesting thank you. Because I don't about the existence of this paper of course. And in this context, we are missing Interpol. I mean are you expecting INTERPOL can be a player in this environment or not? Or maybe it's just a question of keeping the collaboration with the governmental and that's it.

Interviewee: Well I think it's not my inner-role there, because, keeping the relation with the government is a strong one. And I think it's part of my previous comment from before saying that the airline don't necessarily have the direct connection with with Interpol, but then it's done through the government. And I think that if INTERPOL solution can be more integrated into the government system, that would be wonderful. And as government system also involve, I mean there's certainly a need for INTERPOL to make its solutions evolve as well, or make sure they still fit and they always quicker. So definitely there.

Interviewer: And still about Interpol. Because now we are talking a lot about INTERPOL as repository of information that (31,47) for better risk analysis of the passenger. But I am wondering in collaboration with IATA or through IATA, INTERPOL and airlines could develop something, a strong collaboration, a one, not a one-to-one collaboration, but a direct collaboration without going through the government. I'm thinking about maybe training, or something, I don't know. But do you see some possibilities on it or not?

Interviewee: Yeah, I mean, it depends if we are talking about training capacity-building certainly. I think that our members have always been a bit reluctant to any solution that would bring more potentially bring more liability on them, shift the requirements of checking the the passengers or vetting the passengers from the government to them. So because and the basic principle is that border security should be done and controlled by member states. Not delegated to or not in full to air carriers. So if we are talking about using, checking passengers against databases, that's probably not an option. If we are looking at, I mean talking about yes training, capacity-building, creating awareness, looking at maybe I mean brainstorming and how to even develop this, the future of the border control, there's certainly some, much more that we can do there.

Interviewer: Ok, that's very clear. I have just before going out from this part of the interview. I have one question about your 1 ID initiative. Because from time to time, I received also from my colleagues, a request relating to the possibility in the context of this 1 ID for IATA to check probably our SLTD database. Is it something that, I don't know probably 1 ID is not under your responsibility. But is it something that would help or not? Or maybe...

Interviewee: So the good thing is that now we have 1 ID back in my team, so it's also easier to talk about it again. But the thing is that we do, we do foresee that 1 ID will facilitate the flow of information probably at a earlier time. But it does not mean necessarily that there will be a direct connection to INTERPOL databases. The idea is really ideally to have the passenger identity inserted right at the time of booking, when the booking is done. So in terms of facilitation, it will allow the passenger to know whether they need additional travel authorisation, either travel document or credential if it is a digital traveller document. So if their travel credential will be valid at the time of departure and travel. And allow states to have the ability to access this information well in advance if they wish. So it will be not change the relationship between the different stakeholders necessarily. But it will provide better information, better quality information, more accurate data at a earlier time. Which will also, and the idea is also to have access to the biometric data. Be it biometric template or most probably more than the raw data, which will also allow governments to check against database of biometric data available, and not just API data, I mean or nominal database.

Interviewer: Thank you very much, this clarify a lot to me about 1 ID. Next question is more academic question indeed. Because you know that mine is academic masters, so I have also to follow one methodology. I trying to see the differences between the concept of the smart border and the future concept of the seamless border. If for you there is a difference. So my question for you is what is your idea concerning the smart world and the seamless world applicable for border control and border security of course. And then I would like to better identify in the seamless part how INTERPOL can be operationalised. But first let's start to, I am very curious to listen form you what is your idea. Because I need also for my academic profile of the of the dissertation.

Interviewee: It's a wonderful question at 8:30 in the morning. No I would say that, well, we tend to use both expression in, in the same way, or similar way. And I would say maybe there's different, smart would be more in quantitative approach, and seamless more in a qualitative and passenger approach. So, but to define it more precisely, I mean behind smart, we usually have some KPIs about, and we had it also under our programme of smart security. That's what we want to achieve for instance in terms of throughput or though level of security detection etc. Whereas the seamless concept is usually much more used in public communications, and when we also address to the public, to passenger.

Interviewer: That's very interesting because this quantitative vs qualitative is something that I heard for the first time. Thank you because this is a nice approach. It gives me the opportunity to write another 10 pages of my thesis. But anyway that's another story. What I find also as difference, but mostly from, not from practitioner, but from academic, is a kind-of attempt to link the smart border to a physical checker based on a traveller document, while the seamless concept more based on biometric information and less intrusive control. That's the biggest difference I found in the very poor literature I found. What do you think about this vision, this viewpoint from certain persons.

Interviewee: So the smart you would say would be...

Interviewer: The smart would be, I try to repeat, the smart would be, it's still a physical world where the check of the person is based on the travel document. While on the other side, we enter a more virtual world where the check of the passenger is more on biometric information. So let's say the token, the identifier is different. One side we have the chip in the passport. On the other side, we have another chip, but this is traveller digital credential that is now under discussion in the ICAO Working Group. Do you think that this differentiation would work, or you think it has nothing to do with smart and seamless concept?

Interviewee: Not, not really. Maybe a concept that we have behind smart also is risk-based differentiation. So like you would rather focus or have the document check on the people you think are worth checking again manually. But it would, I mean in our view it's, you have also, you can have biometric recognition on the smart border initiative. But there is this, in the Smart, it's just that you apply different measures to different passengers. So it's really risk-based, differentiation of the passenger. And some may go in a more seamless way than others. And maybe that would be the difference if you are talking about seamless border. The issue with the word seamless would be that you apply the same measure to everybody and

everybody can go in the seamless way which is not necessarily what we want. I mean if we want to preserve the border integrity.

Interviewer: And your thought about the role of INTERPOL in the seamless world?

Interviewee: I think it's, I mean it's crucial to have the, I mean we're back to the comment on INTERPOL solutions to be integrated and fully operational, and, and updated so that's also, because the more member states will be able to rely on INTERPOL solution as well, the more they will allow for this seamless flow, and trust the assessment that has been made through their capability. So the question of trust and reliance is crucial.

Interviewer: Sorry because I am trying to link what you are saying with my question. Because now what is very interesting in this seamless concept is the fact that we need to rely, we will rely on persons, on passengers, based on the information that they have exchanged with us, and the information that we have of them. So the biometric information, biographic information. And my next question is if we want this concept be global we need also either to rely to each countries that will be in charge of the maintenance and the management of these let's say, database, repository of information about the passengers. Or should we go towards a global repository, where one international organisation universally-recognised can manage data and can provide data about passenger upon request. Do you understand my question? Sorry I am trying to go 20 years ahead and it's not easy.

Interviewee: The situation might involve that if we base our experience on the attempt that ICAO had to have an international repository of security, situation, situational awareness worldwide, it doesn't work. I mean, after I (46,24) they had started this database and ask member states to to share their risk assessments so that everybody, I mean every country, even those who don't have the capabilities to make their own risk assessment, could have access to this information. So that's not even providing secret information necessarily, it's just a lot of information is available in the press, in the media, but not everybody has even the capability to do it. And there were very very few countries that have contributed. So if we are talking about repository database, or platform, where the information has to be updated even on a more frequent basis, I am very sceptical that it can work. Or you will need incentive or an automation of the process. And that's I think automation is gonna be crucial and I think you know we had one of your questions earlier that cooperation and information sharing and technology, and I think they go hand-in-hand if we want to enhance the information sharing. This has to be automated in some form. But obviously you need first member states to agree on what kind of information they are happy to share with others on an automated basis.

Interviewer: About the seamless concept, what are the risk that you see? The most relevant risk that could be brought by this seamless concept, if one day will be fully operationalised for border security.

Interviewee: I'm not sure if it's a risk. Somehow it poses a risk, it's great when you automate the process, the issue is when automation doesn't work anymore. Then it might pose risk in a way that airports or governments or airlines are not prepared to handle a higher volume of passengers manually or do not have the capabilities to do it. And then any time, we we underpin institution like those, it pose, it poses problems. Also if you think that, I mean if for instance you imagine that you would have risk-based differentiation at security-screening. Then if everybody has to be screened again at the same level, you need the screeners to be trained for it and the risk are always when you have to perform operations which are not regular, I mean in the regular type of operations. So that would be one. Then in terms of recognition, I think the current system be that border control or security, assume that even if agents are very well trained, they are not necessarily able to recognise or identify someone who is not the true-bearer of his passport. Or sometimes you know even to recognise that there is a forged document. So the introduction of automation, which is, the backbone also of the seamless border, brings, brings higher security to me. It doesn't mean that you should not have agents. I mean the human factor is very important. But my opinion is that automation also raises the level of security here.

Interviewer: I have just one more question and then we finish also because I don't want to stay more than 1 hour. I have also some limit about it. We talked, and indeed it's the reality now, we have INTERPOL SLTD database, that is a global repository of stolen lost document. What do you think about the possibility of Interpol? Because indeed we have already but is not a global repository, but if INTERPOL will foster his member states to share more biometric information about criminals. To facilitate also the detection of them at border when they are crossing the border. Do you think that a global INTERPOL repository of biometric information would be a good solution to enhance global security or you don't expect this?

Interviewee: No I would tend to think it would be. The question is more how to make it work. And I've not been thinking a bit too much before, but it's probably feasible. Especially when you talk about face, you know if you want to match someone against a huge gallery of faces or even fingerprints. You know it can take ages. But probably with through a combination of information already through, maybe through names, and then associated biometrics, if the two can be linked, that can be an option. And if there are ways to break down repository of faces so that the match can be done in a in a short time. That could certainly be an option. Or maybe for secondary.

Interviewer: I am more focussed on first-line check, than secondary. Because secondary means that there is already something that let's say didn't go well with a person and we need to investigate a little bit more. The problem is to detect the needle in the haystack, when this needle is invisible, is not...

Interviewee: But maybe if INTERPOL wants to take the role of like CBP is doing but for you know worldwide and do the check the same time, that's an option. But it's a huge project.

Interviewer: What do you mean that CBP is doing?

Interviewee: Oh like having a repository of the travellers and like creating the galleries when they fly or when they, or providing information to create the galleries, like to be a ID provider, to provide the people's ID.

Interviewer: You mean, you mean repository of trusted people, this is what you are...

Interviewee: Yes, or just, yes just people. The thing is that, I guess, I was thinking of it once, but it will probably you know raise questions from you know civil liberties standpoint. You know, if you know that INTERPOL has your data, there is always a suspicion that they check it against all the possible or they share it with all the possible agencies including the taxis or whatever. I mean, I know there's also a lot of conspiracy theory behind.

Interviewer: Ok, that's interesting. Ok, I think we have finished.

9. Annex C

9.1 Key elements from question S1Q1

Interviewee	ID	Key concepts	Themes
A	E2	Surprised	Emotional
	C3	Struggle	Critical / skeptical
	C1	Not a common language	
	C2	Vague	
	Q1	Where that labelling has been drawn from?	Questioning
	Q2	All border aspect?	
	Q3	Narrow focus?	
	H1	Create a new role for their role in a border setting	Hypothesis-testing
B	C2	Border integrity narrows a little bit the IBM concept	Critical / skeptical
	C2	Linguistic or cultural limitations	
	H2	Link with the IBM	Hypothesis-testing
	H2	Means to go beyond the border and not just safeguarding a physical line	
C	C1	It is not a standard for border management or border security	Critical / Skeptical
	C2	Integrity of border is used as a value of border guard in term of honesty	
	H2	Integrity linked with integrated border management	Hypothesis-testing
	Q4	Marketing aspect (find something looks different than IBM)	Questioning
	D1	Make border solid/ Highest performance	Definition
	D2	Allow the freedom of movement	
	D3	Ensure the security of everyone	
D	D4	The three process called identity triangle: verification, authentication, identification	Definition
E	C1	No interpretation of integrity	Critical / Skeptical
	H3	Border integrity is how prevent: harmful people/goods, non-compliance, smuggling, trafficking from crossing borders. If you have border integrity then you are preventing that illegal activity.	Hypothesis-testing
F	D8	Huge term	Definition
	D3	Screening against databases, so looking for known criminals, known lost documents or stolen documents, looking for known stolen vehicles	
	D3	Training and expertise to identify things that are not yet known	
G	D3	Need to ensure that borders are against any threat should it be safety, security (global migration, human trafficking, organised crime, migration crime, smuggling, terrorism, fraud, drug, etc.), but also from the economic point of view	Definition
	D2	Need to ensure that borders has to still be open to facilitate the movement of legitimate people and goods	
	D5	National coordination in place with all the agencies involved in the different types of crime	
	D5	International cooperation, strictly with other states or with other international organization	
	D6	Appropriate tools: technology, risk management, information-sharing, etc.	
H	E2	Interesting / IATA does not have	Emotional
	D6	Kind of border by design for countries to embed technology, process, rules and regulation	Definition
	D3	Making sure whoever is not allowed to cross the border is detected	
	D2	Making sure whoever is allowed to cross the border can go easily	
	D7	Sense of connection or integration with other country if you see a more global level	

Table C1

9.2 Key elements from questions S2Q2 to S2Q5

Interviewee	ID	Key concepts	Themes
A	I1	INTERPOL established its border identity (via SLTD)	Organizational Identity
	I2	INTERPOL established its border identity (via collaboration in international crime across borders)	
	I3	INTERPOL quite good at fusing together the disparate agencies that rarely work together to actually come together in collaboration and operational training and events (CBT)	
	H1	INTERPOL to uplift the relevance of it into a new border setting not limited to SLTD and CBT through embracing next-generation biometrics	Hypothesis-testing
	H2	INTERPOL to uplift the relevance of it into a new border setting through broader access to data with interpretation of that data leading to intelligence and trends that could be fed out into governments or others	
	H3	INTERPOL continues to be a good adviser and guide on policy and process (countries learn from the best practice so they can turbo charge some of their transformation) with this approach to be expanded at border.	
	H4	INTERPOL to develop a common understanding of how-to police & borders detect threats, identifying victims and the vulnerable and bringing them to places of safety (best practices).	
	H5	INTERPOL to unify the police operating model and environment at border for industry (airlines & ICT) so that helping in deconstructing the challenges that industry has with interfacing all of these different countries that have different operating models and environments.	
	H6	In technology setting, INTERPOL in guiding countries into using best-in-class technology that identify threats, qualify identity, and importantly are able to be intelligent enough to automate systems and processes.	
	C1	INTERPOL talks in grand terms but then struggle on scope (not properly defined or clarified in ambition, milestones) and scale (how does it fit with its limited investment and staff?) and strategy (how does it then develop levers either into its member states or others, to support it in that scale?)	Critical
	C6	INTERPOL at border rely too much on SLTD and CBT initiative linked with SLTD	
	C8	Unclear INTERPOL ambition & milestone related to border	
	G1	EU harvesting data, providing analytics and moving to advanced border vetting and security protocols (i.e., ETIAS) with EU becoming one of the most significant data depositories for border security in the globe.	Challenges
G2	Trust, at the focal point of all of what needs to be done to optimize border security and bring about a better integrity to it.		
G3	GDPR as a potential limitation in EU data exchange		
G4	Interoperability with EU systems		
G13	INTERPOL to provide added value into the EU environment other than possibly a facilitator for some enhanced data and access to the SLTD database?		
B	I4	The wider INTERPOL universe than the EU (potential of information)	Organizational Identity
	I1/I7/I9	INTERPOL systems in place and their use which support very much to complement the European systems with much wider information (databases)	
	H7	INTERPOL to play a strong role in the security of the borders facing the challenges related to use and exchange of information amongst different agencies.	Hypothesis-testing
	H8	Important plays together with European agencies, in ensuring the border integrity (i.e. joining EMPACT).	
	G5	INTERPOL to train border guard on being more aware of what they can see things and detect things that are not normally in their skills and competences (i.e., FTF)	Challenge
	G3	EU serious legislative limitations preventing INTERPOL to operationalize its systems (i.e., information exchange).	
	G4	EU structural limitation ended up to no information exchange police, border, custom.	
G6	INTERPOL to foster enhancing cooperation with the judiciary polices not in scope of border agencies for sharing more tailored information with border agencies.		

	G7	INTERPOL in fostering judiciary polices to provide tailored guidelines to border (with no personal or confidential investigation data) as trend changes constantly.	
	G2	Trust-building	
C	I5	INTERPOL innovation centre	Organizational Identity
	H6	INTERPOL to engage with Frontex in research and innovation for border (adapted to EU)	Hypothesis-testing
	H5	INTERPOL to engage with Frontex in global use of standardized systems to facilitate harmonization.	
	H4/H7/H3	INTERPOL to facilitate third countries in joining the EU border regulatory framework under development (i.e., ETIAS) to avoid economic consequence for the Europe.	
	G7	INTERPOL to support border in the field of counter-terrorism with border detection information purely and not investigations. Building up and updating the common indicators of risk related to terrorism is critical	Challenge
D	I1	INTERPOL does supply a lot of the capabilities that we need at the border (travel document databases)	Organizational Identity
	I7	INTERPOL does supply a lot of the capabilities that we need at the border (Nominal databases)	
	I9	INTERPOL does supply a lot of the capabilities that we need at the border (interoperable solution)	
	H1-3 H5-7	Enacting UN resolution through proper disclosure of data of known criminals and terrorists, even biometric, coping the GDPR limitation through INTERPOL as a global repository (needs at political operational and technological level a lot of fine-tuning).	Hypothesis-testing
	G4	Legislative limitation in Europe (GDPR) for border management due to the lack of recognition as law enforcement task (with intelligence task) not only public task.	Challenge
	G8	Biometric exchange of information	
E	I1	INTERPOL main asset (SLTD)	Organizational Identity
	C4	Other areas are less well-known (i.e. Notice)	Critical
	C7	Communication with border agencies could be more active	
	C2	Build better communication so all have a better understanding of where INTERPOL fits in the border picture	
	C3	Missing a very clear chart summarized both in the EU and internationally about who does what? What are the areas that INTERPOL does alone? What areas does INTERPOL overlap?	
	G9	INTERPOL is traditionally associated with police and not with border agencies (issue with countries where police do not operate the border)	Challenge
	G4	There are so many different systems in place both at the national and international level that even trying to get agreement on how these systems would talk to one another is a challenge.	
	G9	INTERPOL to move on creating a new identity which is much clearer about the role in global borders.	
	G10	INTERPOL's main asset in global border management is SLTD but not globally used.	
	G09	Not everyone understands differences Europol/ Interpol. Why do we need two police?	
F	I1	Information our INTERPOL key element (travel document databases)	Organizational Identity
	I7	Information our INTERPOL key element (nominal databases)	
	H9	INTERPOL bring people from police to the border environment in training sessions	Hypothesis-testing
	H10	INTERPOL to push internationally for less privacy right at border (US approach rather than EU approach)	
	H9	INTERPOL bring people from police to the border environment in operations	
	C4	Lack of biometric information	Critical
	C5	Technological retard to search biometry	
	G3	Issue with privacy law preventing collection of biometric data	Challenge
	G4	Expand I-24/7 currently day goal	

	G7	Establishing policing as first step to operationalize INTERPOL at border.	
G	I1	Full range of databases, system and tools important for border integrity (travel document)	Organizational Identity
	I7/I9	Full range of databases, system and tools important for border integrity (biometric)	
	I2	IBMTF which helped to enhance the international cooperation and to ensure an efficient border control management	
	I9	Interoperable applications to facilitate the movement of the passenger	
	H3/H5/H4	INTERPOL to support each state to first ensure that they have a strong identity policy in place in order to have a robust breeder documentation	Hypothesis-testing
	G11	Collaboration with airlines	Challenge
	G10	SLTD systematically checked for API PNR	
	G11	Airport authorities to engage with INTERPOL for better collaboration	
H	I1	INTERPOL underpins building border security capabilities through travel document database	Organizational Identity
	I9	INTERPOL solutions integrated into the government passenger data systems	
	I2/I3	INTERPOL has this credibility and member states know that they can also rely on the agency	
	H6	Difference countries technological capabilities with INTERPOL filling the gap	Hypothesis-testing
	G6	INTERPOL to provide access to multiple databases to airlines (or via MSs)	Challenge
	G12	Keep up INTERPOL database relevance (quality, update, etc.)	

Table C2

9.3 Key elements from questions S2Q6 to S2Q15

Interviewee	ID	Key concepts	Themes
A	D1	Higher accuracy rate with biometrics and machines.	Hypothesis-testing
	G1	Advanced technology and seamless require broadens the integration of data holdings from governments, the citizen, and industry	Challenge
	D2	Lack of collaboration is completely dysfunctional in seamless concept so there is a real need for a common system architecture that permits the cross-matching of intelligence holdings into a vetted setting to allow decision-making and fast-track decision making.	Recommendation
	G2	Seamless requires the current operating environment be maintained but improved with data more accuracy	Challenge
	R1	If INTERPOL wants to be a serious player with integrity, it has to have its data depository as accurate, relevant and efficient as possible and ensure its MSs' diligent contribution otherwise it would not be contributing to border integrity, but border dysfunctionality	Recommendation
	R2	INTERPOL is to turbocharge that data set, and start to embrace the role of biometrics	Recommendation
	R3	INTERPOL to recalibrate its own operating environment and opportunity to develop a more authoritative voice on behalf of policing and border security.	Recommendation
	G3	Now the existing technical architecture, which is still quite advanced, is also disruptive to efficiency flows within borders so eGates are to be kept bringing pressure points on volume and flow.	Challenge
	G4	Deconstruct some of the harder engineering of a gated approach that we're used to in the past. But that has to be enabled by a policy and legislative framework that permits that.	Challenge
	H1	You've got to mature the visa and the passport environment, where you're going to permit electronic tokens to act as visa stamps, entry and exit stamps. So, if you're going to move that, you're creating a digital passport and not a physical passport.	Hypothesis-testing
	H2	Digital identity allow for its portability to be shared throughout the traveler process (governments, airlines, back-and-forth, to different vendors and the passenger themselves) with absolute integrity and confidence within those tokens	Hypothesis-testing

	R4	INTERPOL to develop itself to be more agile, informed and a more authoritative voice in that setting with respect to area of innovation that's moving very fast	Recommendation
	C1	INTERPOL went to serious organized crime, counter-terrorism, and cyber. And the biggest hold in that architecture was the lack of one for border.	Critical
	R5	INTERPOL having a proper recalibration, and properly embracing public-private partnerships, which is doesn't date because the innovation is happening within industry; it's not happening within government.	Recommendation
	C2	INTERPOL not to complicate the operating environment with grainy and low-quality info. Particularly in the use of new technologies that would be challenged and disqualified from use if be compromised because the inputted data leading to a series of false positives.	Critical
	K1	In the public policy setting and human rights, it's the ethical use of all this sophisticated technology, to be used as an enabler or disabler of movement of people and goods.	Risk
	K2	Dynamic relationship technology/border guards: both to operate in coexistence with official to be recalibrated by making use of technology to be more dynamic, not to disqualify and deskill them from their role so you design in an optimized resilience to your border security.	Risk
	K3	We could end up developing an environment that is over-reliant on technology. There's going to be border control points where the technology isn't available, so how does that work? So, number 1, we need to have an agility and a mobility to it.	Risk
	H3	There is still a virtual and physical element to our borders. The former in the use of those biometrics, you can have a higher degree of confidence in identification of individuals going through the border, the latter to divert individuals whose identity doesn't match.	Hypothesis-testing
	H4	Technology be in a position to do the cross-matching of multimodal biometrics against a 1:1 or 1:n with INTERPOL to configure itself as a central data hub or a facilitator through a hybrid environment.	Hypothesis-testing
	K4	EU challenge INTERPOL as being in a common operating environments with not just RPD, but more importantly GDPR and other international data principles with regard to, not just the role of personal identification material, but the biometrics that sit with that as well.	Risk
	K5	We could end up developing an environment that is over-reliant on technology that should go down because of a cyber-attack could become a single point of failure and needs to be recognized as part of a national critical infrastructure.	Risk
B	D3	Technologies that are trustful enough, can facilitate work at the border guards and that they can focus where they need to focus instead of being there and doing all the bona fide by doing the same procedures that finally they are applying to all the others	Definition
	G5	You cannot aspire to have the traditional control with the growth that you just mentioned. For me, I think this is the future	Challenge
	R6	You might have to invest more abroad if you want to have something easier upon arrival.	Recommendation
	G6	Extremely difficult the change management, even when you are not changing so much.	Challenge
	K6	Interest in extending use of biometric at border but there is always mixed feelings: the more you develop the technological solutions, the better it is for the travellers and the development of economic tourism; but the staff sees this as a threat to their work. Trust question.	Risk
	K7	The levels of development are so different. The reality is so different. You can standardise in some regions, but you cannot even consider standardising globally. It's simply not feasible.	Risk
C	H5	Transition to digital borders (or to seamless borders) is driven by the industry, but it's not focused on us. It's much more focused on the much bigger markets smart cities.	Hypotesis-testing
	D4	It is acquisition of digital information, or face recognition systems, when people are moving in a certain environment which is not requiring them to stop. There is no longer a physical border crossing point, it's a Faraday cage.	Definition
	D5	The border crossing point is a smart city.	Definition
	D6	The biggest difference between current smart concept and the seamless concept, is the change of identifier. Now we have travel document, tomorrow we will have the biometric information. Now we are passport-centric, and tomorrow we can become human-centric.	Definition

	K8	I suppose you are touching there the ethical aspects of research and innovation. The more technology is placed on the screening of persons, the more likely it is that the technology gap between societies is bigger	Risk
	G7	New technologies to be considered the lobbies of industries, and how industry is pushing us.	Challenge
	G8	Security of the information that is transferred and protection of personal information is not solved and it is an issue.	Challenge
D	K9	Technology is already there, but it is not adapted everywhere. So the technology I think is ready but is it able to be implemented everywhere? Not yet.	Risk
	D7	In the past I mean we had a border guard that looked at the picture in the passport and looked at the person in front of him. With the introduction of biometric, especially multi-modal biometrics, we get to a stronger perception of the real identity of person.	Definition
	K10	Bigger challenge to enrol and register people in some part of the world with serious limitations to apply for an identity document that have negative consequence on seamless border	Risk
	G9	As long as we don't have that worldwide biometric database, there still need to check document authenticity, if it belongs to the person, if data is reliable in a triangulation way	Challenge
	G10	On the part of public private cooperation, that's where we have a challenge because in Europe we are bound by the GDPR	Challenge
	H6	INTERPOL sets up as a facilitator by keeping a database of registered travellers or known travellers to make sure that people don't grant criminals to travel or prohibit bona fide travellers to travel.	Hypotesis-testing
	H7	INTERPOL can really influence border integrity for a lot of member states by maintaining a biometric database.	Hypotesis-testing
	C3	PNR and API are not enough in risk-based approach for a seamless concept. There is a need to go further with social media to better know people and efficient risk-assessment	Critical
	G11	With the growing amount of passengers we need to do something to be able to process all those passengers. We have to innovate and we have to progress and we have to do get into the whole border integrity cycle.	Challenge
	R7	INTERPOL responsible for the biometric data	Recommendation
E	H8	So there's two different kinds of roles that INTERPOL can play: a blacklist, and once the blacklist is fully operational, a whitelist. Everybody else is grey list, people that we have to deal with manually.	Hypotesis-testing
	G12	We know the challenges in volume is going up, risk is going up, complexity is going up.	Challenge
	G13	If you can get data on people and goods for that matter which is accurate and you can do your risk assessment before those people or those goods arrive at your country.	Challenge
	G14	Integrated border management. You need all of these things in a border strategy. And that will have to involve lots of departments, not just the border agency.	Challenge
	G15	End-to-end identity with biometric data so creating a green list of people who are already risk-assessed, (trusted & registered traveller) with their biometrics onto a government system, which can be accessed at your border for confirmation through a biometric data match.	Challenge
	H9	INTERPOL as trusted global entity help with a global database of trusted people whose would not have a problem on uploading personal data once ensured about the data securization and facilities (no longer queue up, officer and passport in a slot ask for questions).	Hypotesis-testing
	G16	In the next 10/20 years, border control will face a paradigm shift. We will not be checking people in the same way we do now, and that will all be brought on by technology in my view.	Challenge
	R8	Create a platform of communications for key stakeholders as nothing will work unless you have the control agencies, the transportation business the tech companies and academics researchers working together behind a single vision.	Recommendation
	D8	A seamless journey differs being a non-stop process. But, seamless traveler is intrinsically linked with SMART as it needs all the constituent parts of a smart border.	Definition
D9	It's a voluntary scheme because if it's compulsory, people will complain about their data and their privacy.	Definition	

	G17	INTERPOL has an identity problem as people thinks it is only police. Whoever does communications has to give more feedback about what is Interpol, what does it do, demonstrate how it helps in stopping bad people/things crossing borders.	Challenge
	C4	INTERPOL border identity limited by SLTD	Critical
	H10	The seamless journey won't remove the problems (human traffickers /smugglers, international criminals and terrorist). However it 'moves and reduce the haystack' so makes easier find the needle (criminal /terrorist) as no longer need to look through the entire haystack.	Hypotesis-testing
	C5	Painful process for a border guard sitting on a desk or behind e-gate checking passports against watch lists. They want to be doing is using their analytical skills and their intelligence on good quality timely data.	Critical
	H11	Future border officer will continue using behavioural techniques, but being a roving officers. It still takes people to stop people. Technology can't do that on its own. And it takes people to interpret the technology. But the border officer will be different than in the past.	Hypotesis-testing
	G18	Governments are nervous about their borders as associating lining up for a long time and passport checks with security. They think that the more the queue is longer, the more security checks are going on.	Challenge
	R9	The tourism industry help building trust in technology as tourism highly contributes to GDP. That's going to bring money and jobs. So we need to use them to get the message out to the public about the reliability of the technology and less intrusive controls.	Recommendation
	C6	Most border agencies work in silos. They are 95% concerned with what is happening in their own back yard, without working in collaboration.	Critical
	H12	I can't see us getting rid of the passport any time soon. But ICAO is working on DTC with already issued basic standards to countries.	Hypotesis-testing
	R10	Borders haven't got a clue about how they construct an arrangement whereby they could run biometrics against the biometric watchlist. INTERPOL to fill this huge gap.	Recommendation
F	G19	The digital travel must be supported by a verifiable security element like a fingerprint or DNA or iris that can be verified by the destination country, possibly in coordination with the origin country or the airline.	Challenge
	H13	Even this digital traveller identity will require the traveller to provide biometrics at the border. It won't be a completely pain-free experience.	Hypotesis-testing
	D10	The private sector drives the technology. So if the private companies see that there's a global appetite for more and advanced technology, then they'll create it.	Definition
	R11	INTERPOL to promote the data standardisation to increase the contributions to the databases	Recommendation
	H14	I think there will always be a verification of the identity at the destination.	Hypotesis-testing
	R12	We can be a communication hub between global databases without actually housing the information.	Recommendation
	D11	Border guards now are not even at the border but in PIU that could be located anywhere in the country actually doing as much or more for border security than those at the borders. The investment in PIU far exceeds the benefit of spending money at the borders.	Definition
	H15	Biometric API will help country to check the fingerprints of the passenger and ideally you have an i-API where fingerprint is checked against known databases and you have a board or no-board decision.	Hypotesis-testing
	G20	We need biometrics in INTERPOL databases to be effective. But technology of housing biometric data is more complicated.	Challenge
	K11	If you're profiling using biometrics, you're entering a dangerous territory where you're analysing and possibly abusing human rights	Risk
G	H16	ICAO is working on a seamless concept which is called the DTC. We are trying to make global governance for any new movement through a model which will have both the virtual token which can be on a smart device such but also continue to have the physical passport.	Hypotesis-testing
	H17	DTC objectives are to ensure that our model is providing the same level of security than what is provided by an e-passport including interoperable with INTERPOL SLTD database.	Hypotesis-testing
	G21	Explore how the ACI project, called Next, fits with Interpol	Challenge
	R13	API guidelines to be updated to include checks against INTERPOL databases	Recommendation

	D12	SMART and seamless border have both the same objective with the former struggling on security while the seamless border concept, it is much more for me related to travel facilitation.	Definition
	H18	Regarding the global repository, I would say that this would be perhaps possible in the long term when travelling with digital will be the majority of the case which is really for, as per today, not yet the case.	Hypotesis-testing
	G22	Physical passport will still be there for, until the next 30 years.	Challenge
	H19	I think that INTERPOL is really well-placed to have this kind of repository because you have already bases with the SLTD database so you could be, INTERPOL could be the right place to have this global repository.	Hypotesis-testing
	K12	The risk is heavy reliance on technologies and all related issues. That's exactly the risks of the future seamless border concept. You cannot go only with the technologies, you will still have the human touch needed.	Risk
H	G23	Different solution that we have to make interoperable.	Challenge
	H20	Seamless as an opportunity to maybe shift the liability about the check of the passenger identity from the airline to the government.	Hypotesis-testing
	R14	If INTERPOL solution can be more integrated into the government system, that would be wonderful	Recommendation
	D13	Smart is more in quantitative approach, and seamless more in a qualitative and passenger approach.	Definition

Table C3