1st eu-LISA International Conference

SMART BORDERS:

A Faster and Safer Way to Europe

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Tallinn, Estonia

Conference Report

Contents

This report is based on audio/video recordings and various notes taken during the Conference. It does not purport to reproduce in extenso all debates and intervention. None of the messages conveyed in this report may in any way be interpreted as stating an official position of eu-LISA

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Welcome address and opening statements

Krum Garkov, ***Executive Director of eu-LISA***
Hanno Pevkur, ***Estonian Minister of the Interior***

Mr Krum Garkov, Executive Director of eu-LISA, opened the conference and addressed the audience alongside Mr Hanno Pevkur, Minister of the Interior of the Republic of Estonia.

Mr Garkov warmly welcomed all participants to the first eu-LISA conference and emphasised its importance to the organisation as well as to all of its stakeholders. He noted that as an organisation, the main purpose of the Agency is to provide high quality services to stakeholders. Nonetheless, he suggested that eu-LISA should additionally act as an agent in the promotion of new ideas and visions that will generate long-term benefits. He noted that the long-term strategic objectives of the Agency include its growth as a centre of excellence and its evolution towards being a hub of knowledge and best practices. Furthermore, the Agency aims to facilitate European policy-making in the field of justice and home affairs (JHA). The conference was organised as an important element of work towards achievement of these objectives, he said. Mr Garkov outlined how the Agency had, in its short, 2-year history, already proven that open exchanges would be

important for its success and that of its stakeholders. He expressed hope that the event would provide a forum for such exchanges. He noted that the Agency intends to host similar events annually to provide a platform for exchange of ideas and for interactions between stakeholders.

Mr Garkov noted that on the occasion of the first eu-LISA conference, it was important to reflect on the Agency's work to date. He stated that expectations had been high from the very beginning, but eu-LISA has successfully managed to fully takeover operational management of three large-scale IT systems while also creating added value through further development. He also stressed the importance of a strong team and a close relationship with key stakeholders. He suggested that the latter could be reinforced through the organisation of such annual conferences.

The main topic chosen for the first conference was Smart Borders, he indicated, first and foremost because of its importance for Europe as a whole, but also because the initiative is a major change driver for how Europe will manage its external borders. The change will mostly be in the technologies used and thus clearly falls under the Agency's area of interest and responsibility, he said.

Mr Garkov went on to outline how eu-LISA would be a key player in the transition to Smart Borders. The pilot to be delivered by the Agency in 2015 should prove in practice the feasibility of the planned technical implementation, he indicated. Then, following conclusion of the necessary legal discussion, eu-LISA would be charged with the planning and implementing phase to launch Smart Borders in a smart way and to facilitate the provision of added value to end users from day one. He suggested that communication with the whole community of stakeholders, institutions of the European Union, Member States and partners from the industry would be a key factor for achieving success.

He noted that the conference's impressive attendance showed that the understanding of both the challenge and the opportunity Smart Borders presents is shared, as is a common vision and a common commitment to making Smart Borders successful.

Mr Garkov went on to thank the participants of the panels and expressed his hope for passionate exchange as most success, he noted, comes from open discussions and constructive passion. He indicated that the conclusions, ideas and even actions considered and agreed upon at the conference would be taken on board by the Agency during the planning of the pilot and later during the implementation of the Smart Borders systems.

The aim of the conference, he said, was to be one of the facilitators of the overall success of the project and a step towards its better implementation.

The Estonian Minister of the Interior, Hanno Pevkur extended a warm welcome to all guests of the conference. He emphasised the importance of the Smart Borders initiative, despite the fact that borders, especially within the Schengen area, aren't something that the average European citizen thinks of on a regular basis. He suggested that the situation in Estonia, however, may be different. Minister Pevkur referenced an incident that brought border security to the nation's attention – the abduction of an officer of the Estonian Internal Security Service by Russian Federal Security Service (FSB) agents. Though he noted that the range of problems in border control are wider than those targeted by the Smart Borders package, he suggested that Smart Borders is certainly seen as a part of the solution. He described it as a legislative package with great potential to improve border management as well as the internal security of the Schengen area and stated that the potential positive impact of Smart Borders cannot be overestimated. Smart Borders, he said, demonstrates the importance of good border management and adds value for the whole European Union.

Mr Pevkur went on to say that Estonia not only fully supports the Smart Borders package but has already been demanding it for several years. The data collected when the package is implemented, he explained, should enable law enforcement agencies to efficiently tackle cross-border crime.

He noted that adequate levels of data protection would also have to be assured. He suggested that the European Commission and the Council of the EU must work together to provide arguments for the Smart Borders package and address political concerns that have been raised during its first reading. If not, he worried that it could lead to an impasse with the new European Parliament.

Putting concerns aside, Mr Pevkur expressed excitement about the pilot project starting soon and being entrusted to the capable hands of eu-LISA, an Agency that has managed to prove itself in less than 2 years by successfully administrating the SIS II, VIS and EURODAC systems. He hoped that Smart Borders would soon be added to that list, and if the circumstances were right, perhaps further IT systems.

As an Estonian, Mr Pevkur stated that he is a big fan of e-solutions such as e-government, and he expressed his firm belief that eu-LISA can be a relevant central agency for the European Union in the future.

Keynote session

Marc Sulon
Coordinator for Smart Borders, Head of the Sector 'Biometrics, Systems and relations with eu-LISA', European Commission, DG Home Affairs

Mr Sulon started off by saying that the benefits of Smart Borders have been discussed already at length. However, while everyone is familiar with borders, he asked what exactly makes them smart? Although everyone is familiar with the term *smart*, he wondered how the two things – smart and borders – fit together? In French the term *frontier intelligente* is used, which, he indicated, somehow differs. After some research and reflection, he interpreted that *smart* in this context means intelligent, but also something beyond that – something quick or sharp, capable of responding rapidly. According to Mr Sulon, the combination of these aspects of intelligence and rapidity is most important; this is what makes it something new and clever. He stated that the goal is to add something, but asked what exactly this something was? Mr Sulon said that this is the exact direction in which the search needs to continue.

Mr Sulon first took a look at the context. Europe has been experiencing more and more travellers: in 2014 there are already half a billion border crossings at the external Schengen borders while by 2020, the estimates suggest around 725 million crossings per year. He argued that continuing the status quo, where there is a queue in front of every border guard and waiting times of several hours, is no longer an option. Spatial restrictions and infrastructure constraints at airports, at seaports and at land borders also present problems. The European Union is trying to find solutions to these problems, which is why these two systems are proposed, he indicated.

Mr Sulon elaborated by explaining that the proposals are for integrated means to manage borders and guarantee security while speeding up the process of border control. He explained that this is possible through the use of high-end technologies such as biometrics and complex IT systems. According to Mr Sulon, there is notable experience in the development of such systems already. Valuable lessons have been learned, he argued. He hoped that this experience would be integrated into the development of new systems.

He went on to say that at the moment, the systems used at border crossing points are generally similar for all countries and travellers; they are "one size fits all" solutions. There is one procedure for citizens of the European Union and a separate one for all non-EU citizens. All travellers, including the trusted ones, follow the same procedure whereby they present documents, answer questions and get stamps in their travel document. He said that it is of utmost importance to find ways to establish a difference between different types of travellers. According to Mr Sulon, in order to achieve that, agencies like FRONTEX and eu-LISA are working on implementing the pilot for the new system, utilising experience from existing systems such as VIS, SIS II, and EURODAC.

He also discussed issues with the stamping of travel documents. He suggested that the stamps on traveller passports aren't recorded anywhere except on paper, but documents often get destroyed, lost or stolen. He elaborated by saying that according to calculations there are hundreds of millions of stamps on paper, but asked what long-term goal they serve. He stated that the main responsibility of the border guard is to verify the identity of a person and not necessarily calculate the number of days. Given the sheer number of stamps, it can be nearly impossible to calculate the days of stay, especially in cases where a person has 2-3 booklets full of stamps.

Mr Sulon described an example that he had witnessed first-hand: a situation where a border guard during a passport check sensed there was something wrong. The passport itself was OK, but the number of days posed an issue. In this example, even locating the computer application to calculate the days was time consuming, and then finding the information in the documents for entry-exit was very complicated. In the end, the traveller was sent to a separate line, because there was a difference of 1-2 days and there was an issue with the return ticket. This was a situation where a lengthy calculation was possible, but he queried whether such a response would have been possible if there were 2-3 big planes arriving at the same time. Mr Sulon concluded his example by saying that there is pressure on the guards from the airport, the authorities, the carriers and others. Thus, border guards don't have the possibility to follow everything, he stated, and this creates a risky situation.

Under Smart Borders, he said, two new systems are proposed and Mr Sulon went on to briefly describe both. One of them is the Entry-Exit System (EES), which would automatically record all entries and exits of third country nationals (TCNs) in and out of the Schengen area and allow border guards to retrieve a history for all travellers. The EES would be used at 1800 border crossing points. He also described the Registered Traveller Program (RTP) - the second system that will be proposed to regular travellers. The RTP would enable trusted regular travellers to cross the border more quickly after a simple pre-vetting process that would be similar to the current multiple entry visa process. According to Mr Sulon, the RTP would extend the use of Automated Border Control (ABC) gates already in use for EU citizens to TCNs as well. This is a quick, clever and efficient solution, which is what *smart* really means in this context, he mentioned.

Mr Sulon went on to say that ABC gates have gained a lot of momentum in Europe, getting support from both national authorities and the EU. This has been a strategic objective of the External Border Fund since 2011, partly due to the possible link to the RTP system, he noted. He admitted that the approximately 300 ABC gates currently installed in Europe might seem like a lot, but in Hong Kong alone there are in fact 600 such gates, highlighting the potential for further deployments at airports. At seaports and land borders, he noted the need for new solutions.

Mr Sulon further stated that within the Smart Borders package it is important to assess the costs as well as the benefits. He noted that this had already been done in the study conducted by the European Commission. He argued that border guards will get distinct benefits – the systems will simplify their work and allow them to concentrate more on the traveller and less on the documents and stamps, since the number of days will be calculated automatically. In addition, the implementation of RTP in combination with ABC gates will remove a lot of travellers from the queues in front of the guards, which will enable the guards to spend more time on travellers who haven't applied for RTP or aren't considered to be valid candidates. He noted benefits for carriers based on the shorter connection times between flights. He suggested that this benefit is particularly notable because the consequences of delays must be borne by the carriers. Infrastructure operators would also benefit, he said. Airports are limited in space and it is their goal to guide travellers into the shops instead of having them standing queues. Finally, travellers would clearly benefit. The RTP enables speeding up the process for all travellers as a significant portion of trusted travellers are removed from the queue, providing speed-ups for all.

Mr Sulon also spoke of potential benefits for general visa policy management. He expressed an expectation that this system will allow for better identification of those who have overstayed their visa. Statistics gathered would be valuable for assessing whether things need to be changed or whether visa relations with certain third countries need to be reshaped.

Moving on to issues of data protection, Mr Sulon posed the question whether there is a price to be paid in terms of rights and privacy. He expressed confidence that it is possible to develop the system without sacrificing the right of privacy. Data protection is essential, he stated, as is guaranteeing that only necessary data will be collected. Mr Sulon referenced the Commission hearing in front of the LIBE Committee in the European Parliament where this issue was discussed. He indicated that the current proposal has important limits on the retention period and the data collected.

According to Mr Sulon, the Commission was previously requested to launch a proof of concept. He assured that the end of the first part – the Commission-led technical study - was close. He said that after the study has been made public in mid-October, it would be presented to the Council for discussion, and the orientation of the Commission and the Council for the pilot would become clear by the end of 2014. This would allow eu-LISA to implement the pilot and end it by the end of 2015, he suggested. He anticipated a re-launching of the legislative process and conclusion by mid-2016. Mr Sulon called it a short and smart timeline.

Mr Sulon highlighted the significance of the challenge, but also assured that the discussion on the pilot would continue in parallel, He also suggested that political discussions should continue on topics not represented in the study. He said that working in this fashion should make it possible to rapidly progress and get a final result by the summer of 2016. Then the procurement, implementation and full operation by early 2020 would likely be possible.

In conclusion, Mr Sulon argued that the use of this sophisticated technology can be the only answer for achieving both security and facilitation in and around the borderless Union. He pointed out that the negotiations are as complicated as the development of the technology. He said that the Commission has learned valuable lessons from SIS II, which have been taken on board, especially when considering delays and costs. He underlined the importance of co-operation on this project, taking all the previously listed aspects into account, in order to achieve implementation in a clear way and to ensure that all stakeholders benefit.

Pasi Nokelainen

System Manager for Border Checks, Finnish Ministry of the Interior

In his speech, Mr Nokelainen presented some national perspectives based on Finnish experiences, spoke about current border controls in Finland and made some recommendations for the future.

He started off by noting that the Finnish Border Guard has always been interested in using the latest technology. According to Mr Nokelainen, the Smart Borders package is extremely interesting as a means of increasing throughput at border crossing points (BCPs) while also keeping the quality and consistency of the security checks at a high level. He suggested that new tools such as those proposed under the Smart Borders initiative are definitely needed to aid border control and Finland is examining the technologies needed to support such developments.

In Finland, he noted, approximately equal numbers of EU citizens and third country nationals cross the country's external borders annually. He noted that e-gates and Automated Border Control (ABC) systems had been introduced for EU nationals initially. However as TCNs have become the largest traveller group at airports, exit ABC gates have been opened up for certain visa exempt travellers (citizens of the US, Japan, South Korea, Canada, New Zealand at the moment). Mr Nokelainen stated that checks at ABC gates are the same as for EU travellers with the exception of the recording of the additional data and database checks required under the Schengen Borders Code. The exits of the travellers are recorded in a national EES. He stated that there are certain issues that arise because of the current lack of a Schengen-wide system - the stay has to be manually calculated and documents stamped, for example - and these factors restrict the use of ABC gates. Finland is technically ready to expand usage of ABCs to all visa exempt travellers, he noted, were it not for the stamping requirement.

Mr Nokelainen went on to explain that an ABC system for visa holders is being piloted at Helsinki seaport, noting that the seaport receives a lot of ferries from St. Petersburg and was therefore an ideal location for such a pilot. Mr Nokelainen explained that within the pilot, 3 bi-directional ABC gates are being utilised and some trial features have been added separately to examine aspects of the proposed EES and RTP processes.

Fingerprint scanners, for example, are being piloted in the e-gates (four-finger and one-finger scanners). He went on to describe the different scenarios being examined, particularly those which came up in the discussions during the preparation of the Commission study. He noted that it has also been a good way to test traveller reactions to guidance and animations. Because the pilot is set to conclude in November, he apologised that detailed results could not be presented. Some lessons noted, however, related to issues associated with fingerprint scanning at the ABC gates. It was suggested that there is a definite need for clearer instructions and animations and that cultural and behavioural differences must be taken into account so that the process is understandable to a variety of people. Organising the work and processes at the BCPs can present huge operational challenges, he added. In completing his discussion on the current pilot at Helsinki port, Mr Nokelainen noted the possibility of modifying some elements or procedures in the future in order to accommodate the eu-LISA Smart Borders pilot.

Mr Nokelainen went on to focus on the problems associated with land borders. Such borders, especially trains, pose additional challenges, he suggested. As checks take place in moving trains in Finland, control times are short, there are people in the corridors and the existing mobile technology sets limits. He described a new border check interface for train checks that is in the design phase that would allow use of pre-checked passenger manifests. He suggested that this will help to minimise the requirement for transmission of information to and from central servers during manual controls in trains where communication is often insufficient. At vehicular land BCPs, it is Finland's aim that people do not have to get out of their cars; however, he described how this clearly complicates the fingerprint scanning required currently for VIS verification and potentially later for Smart Borders. Some member states send visa holders to a central building, he mentioned, but this solution was noted to be hardly ideal.

With a view to the upcoming work on Smart Borders, Mr Nokelainen expressed the need for a decision on whether to build upon existing technologies or to base systems on newly-introduced technologies. He expressed his scepticism about future technologies – there have been plenty of promises, but no real technology produced, he said.

He also stated that there is a need for a technically feasible legal base. Mr Nokelainen referenced discussing the aforementioned issues at a BCP and suggested that border officers really want to contribute and to find better ways to do things based on their everyday experiences.

He finished by saying that for the best results, there must be tight cooperation at all levels – between legal, technical and operational experts, between all Member States and all other stakeholders. This, he argued, is what will ensure the desired technically feasible legal basis that will also be operationally sensible. He emphasised that these two systems will have an impact not only at BCPs, but also at foreign ministries and consulates, so he suggested that it must be ensured from the start that all stakeholders are involved. He expressed his anticipation for constructive decisions and actions going forward and added in conclusion that sometimes being street smart and keeping one's feet on the ground can provide the best results.

SESSION 2:
Panel discussion

How could Smart Borders Complete the Border Guard's Toolkit While Satisfying Traveller Expectations?

The first discussion round centred on Smart Borders at an operational level. The focus was on the daily interactions between the travellers and border guards. Questions were posed regarding how any developed Smart Borders systems could best facilitate the work of border guards and satisfy the needs of carriers and other stakeholders.

The session was moderated by **Ciaran Carolan** (Research and Development Officer, eu-LISA)

The panellists were:

Edgar Beugels
(Head of Research and Development Unit, Capacity Building Division, FRONTEX)

Edgar Beugels worked for 15 years for the Immigration Service (IND) of the Netherlands before joining Frontex (the European Union's External Border Agency), right from its foundation in 2005. Initially, he worked there as the acting security officer, but since 2007 he is active in the Research and Development Unit. At present Edgar is the Head of that Unit.

The Research and Development Unit follows up on research and developments that are of relevance for border security. In this context the Unit carries out assessments of technologies, provides (technical) support to its stakeholders (Member States of the European Union and the European Commission), strives for harmonization and contributes to new developments. The unit also participates in short, mid and long term border security related projects being executed at the EU level.

During the past years Edgar actively participated in the development of border control/security policy at both a national and international level (EU and beyond). He was deeply involved (participation in EU Council Working Groups) in the development of the Schengen acquis (creating the borderless area between the Member States of the EU) as well as its implementation (Schengen Evaluation). As a policy advisor in the IND he facilitated the introduction of innovative techniques in the field of border control (automated border control-biometrics based).

He participated in numerous missions to all Schengen Member States as well as in numerous border security related missions to all continents of the world.

Marie-Caroline Laurent
(Assistant Director Security and Travel Facilitation Europe, IATA)

Marie-Caroline joined IATA in 2011 as Assistant Director for Security & Travel Facilitation, Europe. Based in Madrid, she is responsible for the development and implementation of IATA security and facilitation strategy in Europe.

Prior to joining IATA, Marie-Caroline held various positions related to aviation and transport policy in the European Union. She worked in the European Parliament as an adviser to a French MEP on aviation issues and was manager for security and cargo at the Association of European Airlines (AEA) until 2010. Between 2005 and 2007 she worked at the American Chamber of Commerce to the European Union as Senior Policy Adviser on customs policy and intellectual property.

Graduated in public administration and European policies, Marie-Caroline holds two master degrees from the Institute for Political Sciences in Paris and from the Catholic University of Leuven in Belgium. She also studied in Austria and in Hungary.

Helen Neider-Veerme
(Head of Bureau, Estonian Border Guard)

Helen Neider-Veerme is currently holding the position of Director of Cooperation in Border Guard Department of the Police and Border Guard Board. The responsibilities include development of relations with countries outside the European Union and partner agencies in the European Union in all aspects of border management. She has been working in Border Guard since 1993 and being involved in all the levels of border management starting with performing border checks in harbor and airport border checkpoints, followed by the position of analyst of the border guard activities at operational and strategic all levels. Starting from 2007 she has been involved in organising on behalf of the National Border Agency the operational cooperation with Frontex. The task includes managing national resources for participation in Frontex joint operations, trainings, pilot projects and gathering feedback from border guard officers on their experiences in border control activities performed during joint operations. Her interests include integrated border management, border security, border control, international cooperation and multilevel governance. She is Alternate member of the Frontex Management Board, representing Estonia, and she has been developing the European Joint Masters in Strategic Border Management. Helen Neider-Veerme holds an MA in Social Sciences from the Estonian Academy of Security Sciences.

***Mr Beugels** began the panel by outlining his thoughts on existing knowledge and infrastructure that must be utilised when planning and developing any new Smart Borders systems and posing some technical questions that he considered open but of particular relevance.*

Each panellist began by outlining their principle points around which subsequent discussions were elaborated.

To begin, he noted how FRONTEX connects with the Smart Borders package – most importantly, FRONTEX offers support to the European Commission and eu-LISA. It had already contributed to the study, he noted, and intends to aid in the implementation and execution of the pilot.

Mr Beugels continued by taking a look at one of the themes that was important throughout the discussion – that one must consider what is in place when contemplating what is foreseen within the Smart Borders package. As an example, and considering that the VIS system is currently being rolled out, he suggested it to be sensible that the EES would make use of the same identification tool as for those enrolled in the VIS system. Further emphasising the value of what already is in place, he noted the need to build upon the experience of recording biometric data at consulates. He added that this also means that the equipment for RTP enrolment is largely in place and that the verification of biometrics at the point of entry is also in place. He concluded by saying that for RTP, experiences from national traveller programs can be factored in. Referencing the previous presentation and Finnish experiences, ABC gates were noted to be another element of the important pre-existing infrastructure at BCPs with relevance to Smart Borders. Experiences such as those of the Finnish border guard, he indicated, made it clear that while current set-ups aren't perfect, there are nonetheless valuable lessons to be learned for the implementation of the Smart Borders pilot and package. Finally, he noted that many Member States already have national entry-exit systems and that these should be considered in planning going forward.

A number of technical questions were noted to be outstanding and Mr Beugels detailed some of those that he considered particularly crucial. He wondered whether the electronic passport was going to be a requirement for RTP so that authorities can match the information from the passport chip to the traveller. In this regard, he indicated that it was important to note that the current use of electronic passports for such purposes is challenging even with EU nationals because of problems with certificate exchange. As this is important for the secure use of ABC gates, it was noted to be a vital consideration. He asked whether there really must be an additional verification via fingerprints. Finally, he referenced opportunity, noting that the exploitation of already existing data could bring real benefits when planning, designing and developing the new systems.

Mr Beugels went on to examine possible impacts of Smart Borders on border guards. He suggested that the RTP and automated solutions for border crossings could offset the increased workload that could be anticipated with increasing traveller numbers. He proffered that while it might be easy to imagine TCNs transiting ABC gates at airports, land borders are more complex and it must be queried how to offer facilitation to RTP-enrolled TCNs at land borders. Mr Beugels continued by explaining that fingerprint verification is an additional task for border guards. He emphasised that it is of utmost importance to take a step back and take a look at border control processes, trying to locate where the verification can be introduced with the lowest impact. He stressed that countries that have already introduced fingerprint verification checks such as the USA could provide good examples for analysis. In addition, he stated that border guards themselves could suggest ways to optimise the process.

Mr Beugels went on to examine an issue common for all external borders – the cost.

Focussing principally on ABC gates, he suggested that acquisition costs must be offset during use. Smart Borders will likely increase the usefulness of ABC systems, thereby influencing this balance. He also expressed the hope that as more gates are purchased, maintenance and systems costs should also decrease.

In his final comment at this stage, Mr Beugels directed his attention back to the RTP program. He wondered how to guarantee that a vetted person remains trusted thoughout the lifetime of his/her RTP registration. According to Mr Beugels' example, in the US there are checks and information renewals every 24h. Whatever the system he said, there must be something in place to ensure that a person is still trusted when he or she crosses the border.

In her introductory presentation for the panel, ***Ms Laurent*** *gave an overview of the goals of the aviation industry in terms of passenger facilitation, the kinds of systems that are in use that are relevant in this regard and the need for increased data exchange as a means of achieving improved service to passengers.*

As an introduction, Ms Laurent gave a small reminder of what IATA is – an industry association that represents 240 airlines at the international level, in total making up 84% of global traffic. She elaborated by saying that the vision of IATA and its member airlines is a situation where travellers would be able to get from car to airport gate in 10 minutes and from the plane to the taxi in 30 minutes. According to IATA's vision for 2020, 80% of passengers should meet these goals. Another important figure to keep in mind, she stated, is 40 minutes for transfer traffic - the ideal connection time between flights. These targets, she emphasised, should be kept in mind when introducing new controls that may have an impact on transit times.

Ms Laurent also explained the passenger perspective – there are 14 identified steps and potential bottlenecks that passengers have to go through on their journey. These include industry processes, such as check-ins, as well as authority-led security screenings and border control processes. Ms Laurent took a look at these steps from the industry perspective, in order to determine whether and how the expectations of 10 and 30-minute processes can be met. Such analysis at this stage is critical, she said, as IATA is expecting annual traffic growth of 5.4% in the coming years, which obviously poses more challenges. Ms Laurent referred to the previously mentioned US situation with up to 4 hours waiting times at borders even with current passenger numbers. Ms Laurent noted the problems that such delays cause in terms of connecting times and passenger convenience and indicated that from the airline's perspective, all efforts to facilitate passenger transit must be considered.

It was noted that IATA considers the introduction of automated border gates (ABCs) as an important element in efforts to facilitate passenger transit and border control. Ms Laurent said that the potential benefits of automatic BCPs have been evaluated, and they are clear for everyone involved – no long queues, passengers get processed quicker and they have more time to shop. From the perspective of governments, she argued, these systems are more cost efficient and they allow focusing more on problematic passengers. Thus, there are already more than 300 ABC gates in Europe, she noted, as can be seen on a map on the IATA website. She noted that IATA has worked with FRONTEX and ACI (Airports Council International) on the development of a guide to using ABC gates. Clearly, she said, the use of ABC gates is already entering a stage of significant maturity. Nonetheless, while IATA has focused on promoting the use of ABC gates, Ms Laurent suggested that the focus would need to shift to educating passengers on how to use them, particularly during implementation of Smart Borders. Otherwise, she advised that passengers may not use ABC gates and therefore many problems evident today will persist.

The second focus of Ms Laurent's presentation was passenger data exchange. She stated that the airline industry currently considered opportunities in this regard to be massively under-exploited. Airlines today send API (passport) data to EU countries, as well as occasionally other countries, she said, and PNR data will soon follow. But many question what governments do with this data and whether more could be done, she stated. As per the API directive of 2004, the main usage for such data currently is for immigration, customs and security. However, she noted that in Europe the main system for data transfer is a legacy batch system that contains passenger data and passenger manifests. When the data is sent to the border control authorities, no response is typically provided. She contrasted this with the situation in some countries, namely the USA, Australia, and the UK, who are using and/or developing interactive API systems. In such systems, when data is sent to the authorities, there is a response with a yes/no answer. This feedback to the airlines as to whether to board a passenger or not was noted to be of use in helping to avoid the passage of inadmissible passengers and the related penalties. It was noted that fines that range from 3000 to 5000 euros per inadmissible passenger, with an average of 3500 per passenger while repatriation costs and management costs also must be borne in mind. Ms Laurent acknowledged the obvious complexities in providing live risk assessment through a 24/7 system but explained that there are clear advantages to these interactive systems for the airlines as well as the authorities that typically warrant the extra efforts made to provide such systems. In terms of developing the necessary IT, attendees were reminded that there are systems already in place that allow for a dialogue between the carriers and the authorities.

IATA has developed industry solutions to help and support member airlines in making admission decisions and Ms Laurent briefly mentioned some of these. However, with the introduction of a new EES and the associated elimination of passport and visa stamping, she wondered how the carriers would check passenger visa validity and the general admissibility of the passenger. She strongly expressed her view that when introducing such changes, it must also be considered how the carriers can check whether a passenger is admissible. Otherwise, she added, the alternative would be to take away the verification liability from the carriers.

Ms Laurent summarised her presentation by stating that the message from the industry is to look into increasing automation to facilitate passenger travel. As well as developing technologies and increasing the number of systems available, passenger education was also emphasised as a key consideration. Continuing the theme of building upon existing infrastructure emphasised by the previous speaker, she looked towards improved data exchange between authorities based on update of existing systems and standards, bearing in mind that API systems have been developed already and that there are 15 member states in Europe with PNR systems.

In her presentation, ***Ms Neider-Veerme*** *spoke about Estonian experiences, provided an overview of the status quo in border control in Estonia and expressed some hopes for future developments.*

Providing immediate reference to the proposed Smart Borders systems, Ms Neider-Veerme noted that Estonia has operated its own EES since the mid-1990s and stated that it has been quite effective thus far. The system has enabled better monitoring of traffic flows in order to adapt policies and tactics at BCPs where the passenger flow is highest, she said. When considering the use of biometrics in the proposed systems, Estonia is confident that infrastructure and knowledge already exists to deal with any newly introduced systems. She explained that Estonia has such knowledge based on biometric collection for visa purposes at embassies and at borders as well as for passport purposes, with fingerprints being enrolled from Estonian citizens when acquiring passports.

She went on to speak of the possible advantages of a Schengen-wide EES. Her practical experiences highlight the fact that every border guard spends a lot of time looking at stamps and counting days, she said. Although this situation would be improved, she doubted the assertions of previous speakers that the work of border guards would be necessarily simplified. She elaborated by saying that the work will not be simplified, but totally different. The work of the border guard will likely become more tactical with a need to gather and analysed composite information, she suggested. This creates the need for a new type of border guard profile and knowledge, Ms Neider-Veerme proffered, noting her opinion that this is something that hasn't yet been completely thought through at this stage.

She emphasised the need for consideration of data protection implications of the new systems and noted the Estonian opinion that the minimal dataset to be checked should be agreed upon. If upon entry the system detects an overstay for a particular traveller, she argued, the data collected should be forwarded to a second line of checks. Other passengers could continue to quickly pass through the border and only the absolutely necessary dataset associated with their transit should be retained, she indicated. Thus, she said, lawful travellers could benefit from faster border crossings carried out with the principles of data minimisation in mind.

Discussion session

The panellists went on to delve further into some of the topics introduced at the outset and considered some points provided by the audience. The main topics considered included:

- Existing systems from which those planning and devising Smart Borders systems should learn
- Advance data collection and provision for expedited and/or secure border control
- Providing information to the traveller on visa status and remaining duration of stay
- Biometrics at border crossing points
- Locations for RTP enrolment
- Processing travellers with multiple passports in the EES
- The balance between security and facilitation in Smart Borders planning
- Priorities for the Smart Borders Pilot

Existing systems

Ms Laurent spoke further about existing Registered Traveller systems, noting that from the airlines' perspective, passenger facilitation is key. She stated that IATA has always encouraged governments to allow for the mutual recognition of RTPs and the planning of a Europe-wide RTP system was certainly a step in the right direction in this regard. Otherwise, she provided the example of mutual recognition between the Dutch and American systems and suggested that such mutual recognition could still be considered with a Europe-wide system. Ms Laurent insisted that experiences to date highlighted the benefits that such systems can bring. Although additional benefits often come with RTP system enrolment (privileged parking, fast lanes, parking, boarding, etc.) and she considered that such benefits may also be of interest in some cases with a

Europe-wide RTP, she suggested that provision of these services is typically driven by commercial considerations. Thus, she said, there was little interest from an industry perspective in such aspects and she declined to discuss the matter further.

Mr Beugels referred briefly to the APEC system for visa free and facilitated travel that operates across a number of different countries. He stated that for any such system, harmonisation is a crucial element that is too often forgotten. He emphasised that the main clients of the systems are the travellers and no matter the system, a traveller would like to see something recognisable. He suggested that this has posed a challenge in Europe to date. ABC systems, he suggested, were a good example, having differed in implementation at national levels. Such diversity, he stated, does not contribute to making the process any faster and smarter. He recommended that the authorities put themselves in the position of the traveller and ask whether the installed systems are really understandable, smarter and easier.

He agreed with Ms Laurent that from the passenger point of view, interconnected RTPs are an ideal situation. However, he predicted that the particularities of the EU make such developments unlikely in the near future. Mr Beugels said that the main focus for now must be on the EU alone. The UK IRIS and US VISIT schemes were referenced as RTP type systems that focussed on entries and exits to one country and therefore had similarities to the proposed European RTP system. He stated that Europe must learn lessons from these developments elsewhere and should put its house in order, suggesting that this was precisely where Smart Borders comes into play.

Advance data collection for expedited and/or more secure border control

Airports

In response to a question whether the provision of data in advance is helpful, Ms Neider-Veerme was forthright in her response. She considered that advance data provision can enable pre-checks so that persons don't have to be stopped at the border queue or at the gate and thereby can transit more rapidly. Travellers benefit from targeted rather than random controls imposed on all passengers, she said. She also argued that such data provision could be made in a manner cognisant of data protection needs. She noted that data may be communicated and deleted once all checks have been made.

Ms Laurent said that from the carrier perspective, API and PNR data requests haven't been challenged in terms of need. However, she indicated that carriers question whether the data can be (better) used to make things quicker. Carriers would also be interested in getting information about Schengen zone clearance before embarking, she stated, as making decisions solely based on passports is prone to error. Considering Smart Borders, if there is no visa with a date or no stamp, she asked what the airline may check. Bearing in mind the data exchange systems that currently exist, she suggested that such systems be further explored as a possible means for pre-clearance.

Later, Mr Marc Sulon from the European Commission offered a brief remark noting that the visa sticker will not disappear. Carriers will still be able to check the travel document, he said. Furthermore, and concerning the calculation of stay, he indicated that carriers are not obliged to calculate durations of stay. Nonetheless, he explained that the Commission's Smart Borders study assesses the possibility of returning information to carriers as well as to travellers who likewise need to know whether they have the right of entry before starting the travel and purchasing tickets.

Ms Laurent responded by stating that some airlines have given IATA feedback that they have been confronted with fines when travellers were not calculated correctly. She noted that this could be linked to different national level issues but considered that the issues should be clarified and fully examined in the context of Smart Borders systems planning and development.

Mr Beugels warned that in the context of the Smart Borders package and what it aims for, the idea is not to introduce a decision on entry to be made in advance. However, he stated that pre-collection of data can and should be improved. In this regard, the main goal must be that the guard is better informed to make the right decision, he argued. He said that this must not be related to boarding but only to ensuring that the guard is equipped to make a better decision.

Land Borders

In response to a query from an audience member from Unisys, Mr Beugels noted that the benefits of pre-enrolment to a registered traveller program for train travellers would likely be limited. Advance data collection may also be difficult. At road borders, however, he suggested that pre-enrolment into such a system and advance provision of traveller data might be valuable. Ms Neider-Veerme continued by suggesting that the situation is somewhat mixed. In Estonia, she explained that traffic at most land BCPs comprises lots of small cars. She wondered how to register someone who is traveling on a private basis from St. Petersburg to shop in Narva. On the other hand, she noted that there is a pilot underway in Estonia for bus travellers in which bus companies are providing the Estonian border guard with data that allows evaluation before a person is at the border.

Delving deeper into the topic of advance data provision at road borders, Ms Neider-Veerme noted that in Estonia, a traveller often submits information ahead of time for the purpose of getting in queue for border crossing. She suggested that this information could be used, although processes for the traveller should be straightforward in any case.

Mr Beugels concluded that there are different contexts at different borders: at sea borders, for example, there are crews, cruises, and ferries. There is no one solution that fits all, but for all different types of borders and solutions it might be useful to get early information so that guards are in better position to make the right decision and in some cases perhaps also to provide additional facilitation.

Providing information to the traveller on visa status and remaining duration of stay

Both the means and the timing of information provision to travellers were discussed. Edgar Beugels noted that a TCN with a visa planning a trip would ideally want to check at home whether they have days left on the visa. At the airport, after having bought a ticket, is definitely too late, he said.

Ms Laurent said that the automatic system maintained by IATA online allows the traveller to check what kind of documents or visas are needed. There are systems available in the industry to inform passengers on visa requirements, health requirements, etc. and she suggested that the possibility of adapting these systems for use in Smart Borders be examined.

Ms Neider-Veerme noted her wariness regarding any advance provision of information to travellers, suggesting that like everything, such a setup has pros and cons. In this case when the person receives the

information prior to travel suggesting that they are allowed to travel, they purchase tickets and make plans. Nonetheless, at the border they must still be checked and there's the evident possibility that they will be denied entry. Clearly, the disappointment would then be even bigger, she noted.

Biometrics at border crossing points

Ms Neider-Veerme made some brief points regarding issues related to biometric enrolment and checks at BCPs. In response to a question on the matter from the moderator, she noted that border guards would obviously check fingerprints as required under any Smart Borders legislation as they will have no other choice. However, she noted that it was clear to her that this will be challenging. Because people are different and they use the devices differently, she argued that any introduced processes should be straightforward and definitely not involve all 10 fingers. However, in particular cases, such as if some fingers are damaged, she suggested that the system should be capable of analysing all 10 fingers. Furthermore, she added that set-ups might need to be different at different borders and border types. She summarised that flexibility is important and should be looked at within the pilot.

Examining biometric technologies to facilitate the Smart Borders processes, Mr Beugels indicated that the perfect solution is yet to be found, certainly for land borders. He suggested that industry partners must be included in planning as they're the ones who develop the solutions. Furthermore, he stated that there should be some experimentation on what the different solutions could be. A representative from 3M followed up, stating that 3M has been working with Finland on systems for fingerprint checks in vehicles, and had developed mobile units that can be passed out to people in cars so that they take their own fingerprints. While he noted challenges with controlling that environment and making sure that the right fingerprints are obtained from the right people, he reassured that it is perfectly possible from the technical point of view to enrol and check fingerprints from drivers and passengers in their vehicles at land borders.

Locations for RTP enrolment

The moderator wondered, given the cost of pre-vetting and pre-registration procedures, whether RTP enrolment should be possible at every BCP. Ms Neider-Veerme preferred such widespread availability but suggested that any system should be appointment-based. Referring again to the Estonian queue management system, she noted that people can register for crossings at border check points via the internet or SMS. She suggested that the same system or something similar could be used for RTP enrolment booking and envisaged no serious problems if such an approach was followed

Ms Laurent focussed on the possibilities for such pre-enrolment at airports and noted that already, space constraints are a huge concern. She stated that IATA is fighting with airports and authorities to find enough space for ABC gates. If we now consider adding registration desks, she suggested that there may be very serious challenges ahead.

Mr Beugels elaborated, suggesting that such space constraints may not be an issue at least at bigger airports where there are already dedicated visa issue desks. Thus, at bigger border crossing points, he said that the infrastructure is in place. It is merely the case, he said, that it could be utilized better.

A question was raised by a representative of the Royal Dutch Marechaussee on people carrying multiple passports or multiple people on one passport. He asked how this could fit in with the EES.

Ms Laurent responded by noting that this was part of the discussion with the United States during their planning of the US-VISIT program and when they were establishing ESTA. Their simple answer was to not allow multiple passports.

Mr Beugels pointed out the exceptionality of this case. He noted that where a person enters with one passport and wants to leave with another one, there would be no entry to match to the exit. The border guard would simply have to ask the traveller whether they entered on a different document and then utilise the appropriate document to record exit.

Ms Neider-Veerme dealt with the matter of several people travelling on one passport. She wondered how multiple people's biometric data could be associated to one passport in Smart Borders systems. Again, the need for flexibility was emphasised.

The moderator added that if done appropriately, the use of biometrics should allow the linking of records for a person who has used two passports to travel, assuming the technology can cope with doing so accurately in a database of this size on a daily basis. He suggested that this was one reason why biometrics is part of the proposal.

The balance between security and facilitation in Smart Borders planning

Ms Neider-Veerme dealt with the question of whether Smart Borders could improve security in border management. She suggested that the matter was open for debate and would depend on the method of system implementation later. In particular, she stated that the integration of the systems into border control processes was crucial. Border checks, she said, utilising all available systems, must be meaningful. An important point was that the 10% of persons who are an actual concern must be targeted. Smart Borders, she suggested, if implemented properly, had the potential to achieve this.

Ms Laurent focussed on the question of facilitation. She said that when looking at the proposal today, there's a definite benefit in terms of facilitation. Although it could only be proven when implemented on the ground, she expected that the removal of stamping and date calculations from border check processes would certainly be a benefit. The increased use of ABC gates for registered travellers would also be a clear benefit, she said, but she emphasised again that it definitely needs education and this needs to be considered as part of the whole Smart Borders proposal. She added that beyond facilitation, the main focus of IATA when contemplating Smart Borders is the question of carrier liability. As systems are changed, means for document and traveller authorisation also change. This will affect the liabilities of all carriers, she noted, not just airlines.

Mr Beugels suggested that facilitation would be best achieved with harmonization. He felt that Smart Borders provides an opportunity to develop a more harmonised approach to European border security. Considering that Member States will have to implement any Smart Borders systems, he stated that it was vital that a common level of border security be achieved in the end that was preferably higher than that today. In the end, he said, if there are identifiable weak links then Smart Borders has not been properly implemented. Mr Beugels encouraged Member States to look into coordination and harmonisation as this is what will make Smart Borders a success story.

Priorities for the Smart Borders Pilot

Each panellist finished by noting their principal priority for the Smart Borders pilot.

Mr Beugels emphasised the importance of examining the manual control process as he felt that this is the biggest challenge.

Ms Laurent noted that IATA wants to learn more about the practical implications for document checks by carriers. She also anticipated the results of tests on processing of TCNs through ABC gates with interest.

Ms Neider-Veerme added that for the Estonian border guard, and considering their land border crossing points like the Narva BCP – a highly inhabited area - examination of Smart Borders impacts on local traffic was important. She also looked forward to feasibility studies on trains, especially on the possibilities for using mobile solutions on trains.

In summarising the discussion, the moderator pointed out that the most prominent theme that came through in all discussions was that we really need to build on what we have. There is a need to consider what's there already and where things should be by 2020 and beyond, he indicated. The infrastructure that is in place already, he suggested, included the systems that are in place, the equipment that could be reused or reconfigured, the associated hardware and also the knowledge of the border guards, system operators, authorities and others. Furthermore, there is the knowledge of developing systems that are in many ways similar to Smart Borders. This knowledge, he suggested, has to be utilised. Furthermore, he felt that it was crucial that lessons should be learned from what has been done before.

As well as building upon existing systems, the moderator reiterated the panellists point that integration of new systems with those already in existence was important. He reminded that audience of Ms Neider-Veerme's query about whether the life of the border guard would be easier or more difficult and suggested that integration of the different systems - European and national – needed to be looked at to ensure that the life of the guard was not made more difficult. Considering existing systems, he also felt assured by the fact, reported by Ms Neider-Veerme, that Estonia is getting great benefits from their own entry-exit system. She had noted the usefulness of the statistics and the actionable information provided and the policy and tactical information obtained and the moderator suggested that these are things that need to be emphasised when developing the European Smart Borders systems.

The moderator noted that another theme emphasised in the panel was provision of data in advance. IATA had reported that the carriers are willing and eager to do so, provided that there's evidence on why it is done. He felt that it was clear that the carriers could provide information that can be used in the Smart Borders system and that possibilities should certainly be explored further. Ms Laurent had also pointed out that there are systems at the airport or carrier level that are available and Mr Carolan suggested that the possibilities of using these capabilities should be explored. He briefly touched on the concerns expressed by panellists regarding land borders and sea borders. He wondered whether at land borders where most people arrive by car whether travellers could provide the information themselves, for example, through an online system such as the Estonian system described earlier. He suggested that discussions have to explore whether advance information is useful, how to go about getting it, how to look after the information, etc.

Finally, Mr Carolan repeated the priorities for the eu-LISA run Smart Borders pilot as expressed by the panellists as he felt that these were amongst the most important conclusions from the discussions. These included the handling of exceptions such as several people travelling on one passport, the examination of manual processes, consideration of the carriers' duty to check documents and the need to test mobile solutions at land borders and particularly on trains. He expressed his opinion that the pilot provides a good opportunity to assess whether the technology is there or not, and if not, to try to identify where the currently available systems are lacking.

He concluded with the reassuring opinion of all panellists that the balance between facilitation and security can be achieved with Smart Borders. Smart Borders offers a toolbox to achieve such a balance, he said, but there is a need for flexibility considering the differences in BCPs and in different countries. Mr Carolan ended by stating that Smart Borders must be shown to work at all of the different external borders of the European Union, demanding hard work together with all stakeholders.

SESSION 3:
Panel discussion

Behind Smart Borders: Challenges in Delivering Efficiency, Security and Performance Through Technical Innovation.

The second panel was moderated by **Stephan Brandes** (Head of Operations and Infrastructure Unit, eu-LISA)

The panellists were:

Fares Rahmun

(Project Management and Software Development, Federal Office of Administration [BVA], Germany)

Fares Rahmun has worked for the German Federal Office of Administration (BVA) as IT Project Manager for Government Information Technology Solutions for 10 years and as such is in charge of the technical integration of the European Visa Information System (VIS) in Germany. He has conducted several national and European pilot projects in the area of biometrics and is involved in the German implementations for capturing and checking fingerprints of visa applicants, contributing to the Technical Guideline Biometrics in public sector applications (TR-03121) by the Federal Office for Information Security (BSI).

In the context of border management Fares ihas for many years been a member of the Frontex Working Group dealing with the development of "Good Practices" for the practical implementation of the VIS at EU borders.

Fares holds an M.Sc. in Business Information Systems from the University of Applied Sciences in Cologne.

Günter Schumacher

(Digital Citizen Security Unit, Institute for the Protection and Security of the Citizen, European Joint Research Centre)

Günter Schumacher joined the European Commission's Institute for the Protection and Security of the Citizen (IPSC) in 2006. Prior to that, he was Scientific Officer at the European Commission, Directorate General Information Society and Media (now DG CNECT), with responsibility for biometrics related research projects and policy support. He currently coordinates the JRC's support for the large scale roll-out of biometrics for border control. One of his latest activities was a study on child fingerprints on request of the European Parliament (available at this link). He is currently investigating techniques to improve the quality fingerprints and to prevent spoofing.

Günter Schumacher graduated from Universität Karlsruhe (Germany) with a Ph.D. in Mathematics. Between 1984 and 2003 he worked in the area of dependability research at the Universität Karlsruhe and related spin-off research centres. Before joining the European Commission he was involved in biometrics research, particularly in the area of new fingerprint sensors based on ultrasonic technology.

André van der Meij

(Deputy Chairperson of the SIS II Advisory Group, Programme Manager at the ICT Service of the Dutch National Police)

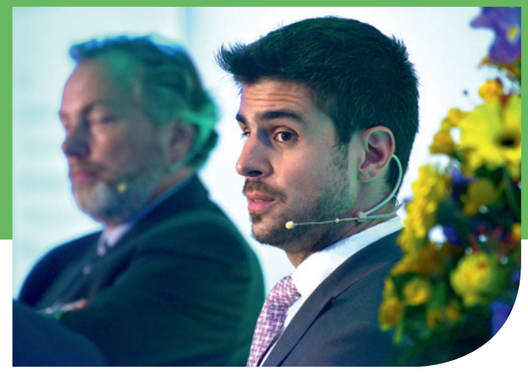
André van der Meij is working as Programme Manager at the ICT division of the National Police. He is responsible for the international relations concerning the Schengen Information System.

He has worked for the Police for more than 30 years and was responsible for the development of the Dutch N.SIS of both SIS1 and SISII. André has been a delegate in international SIS related working groups since 1992 and is currently the Deputy Chairperson of the SISII Advisory Group. He was a member of the Global Programme Management Board during the development of SISII.

André holds a Masters degree in Information Management from the University of Amsterdam.

Each panellist began by outlining their principle areas of interest for subsequent discussions.

*In his presentation that opened the session, **Mr Rahmun** expressed his personal opinions regarding technical and operational possibilities for the proposed Smart Borders systems and sought to raise some points regarding matters that were yet to be discussed*



Mr Rahmun began by noting that technological innovations in biometrics were needed for a successful Smart Borders project and suggested that experts and industry representatives need to discuss possibilities as well as the limits of current technology. He posed a series of questions regarding the realities of what can be achieved and the possibilities for automation. Continuing a theme from the first session, he noted that manual processes for border control must especially be kept in mind.

Mr Rahmun continued by discussing how to find the balance between security and facilitation. He noted that finding balance requires measurement and pondered whether one can actually measure security. He referred to the VIS central statistics and asked whether these were enough to measure the performance of that system. For Smart Borders, he equally wondered what statistics, if any, could be used to assess actual performance during the pilot and later. He expressed his own opinion that typical measurements of processing speeds are not enough.

Mr Rahmun stressed the importance of thoroughly analysing all aspects of biometrics when planning Smart Borders and making decisions regarding such matters as whether 2, 4 or 8 fingerprints are needed, how facial recognition can be used, etc. He particularly focussed on the possible use of 1:n identification in the primary line in Smart Borders-based border checks mentioned in the Commission study. He suggested that, based on systems used in the United States, current technologies should provide an accurate response to a 1:n identification request in about 20 seconds. He wondered what impact this would have on security and facilitation and wondered if such a process is really useful.

Acknowledging that most panellists were IT specialists and were generally tempted to focus on technical questions associated with provision of IT services, Mr. Rahmun continued by emphasising the need to look at things from the perspectives of travellers and border guards. He re-iterated a previous point made in the first panel discussion that life may become more complicated for travellers and border guards as authorities add more and more systems – European and national – that need to be consulted. A need for standardisation and harmonisation was noted. He argued that in all cases, rapid answers are necessary and Smart Borders planning will therefore largely be about balancing the need for speed with ensuring quality checks. He noted that when using biometrics, there are a lot of variables that can be switched off but suggested that all decisions in such regards need to be carefully weighed up. He also stressed that checks must be standardised at all borders – a difficult task considering the different national systems that must be integrated.

The concept of a National Uniform Interface (NUI) was presented in the Commission study on Smart Borders and Mr Rahmun touched upon the concept in his presentation. He noted that the NUI has concepts of message orchestration in order to deliver service to different systems and wondered whether such development was really the right direction. He also questioned whether it was appropriate to place the interface centrally and whether there was a need for similar interfaces at the national level. Acknowledging the potential of the NUI, he suggested that there was a lot of work to be done.

As a final point, Mr. Rahmun suggested that implementation will be very difficult and that the most critical aspects may be those that haven't been identified or truly discussed yet such as national integration and consideration of how the border guard sees the information on their user interface at a national level. He stressed that this has a high impact and if inappropriately implemented, a high potential for damage. He finished with an open question to the audience about how the risks can be reduced. He acknowledged that he had asked a lot of questions but expressed hope that some answers were also provided.

***Günter Schumacher** from the European Joint Research Centre focussed on technical questions related to biometrics in his presentation. He also added further points on the topic of evaluating the security of border control systems.*

Mr. Schumacher began by introducing his work in the technical science part of the European Commission. He noted that the Joint Research Centre (JRC) supports policy development with technical expertise. He noted that his own work often relates to biometrics. He opened by stating that the technicality of biometrics has often been overlooked.

According to Mr Schumacher, incorporating biometrics into large-scale IT systems for border control is especially challenging as there are typically so many stakeholders with different demands and visions. He also noted a tendency to neglect some of the variables associated with biometric use that impact on their use in border control. He illustrated his point by noting that the use of biometrics for border control is fundamentally different from their use in law enforcement. The latter, he indicated, typically involved identification of criminals while biometric use in border control was typically for purposes of authentication. He elaborated further by saying that the way fingerprints are taken is fundamentally different in both cases - In one case, the 'clients' are criminals and in the other case they are European citizens or third country nationals who for the most part are not criminals. They thus demand an appropriate level of respect, which in turn creates an immediate problem with data quality as the means for sample acquisition differ vastly, he suggested. Furthermore, he pointed out the requirement that for border control, devices normally must be cheap, economical, and fast. Generally, he noted that there is no option to wait for results for minutes or hours like the police can. The change in the application case from the initial application of biometrics in law enforcement thus creates additional issues that haven't been dealt with before, he said. Amongst such issues, he added the need for additional security and respect for privacy. He also noted that border control devices must be protected against spoofing and that installations must be protected against illegal access. Mr Schumacher pointed out that the considerations mentioned have a consequence on costs. His experiences suggested that the original estimates for biometric systems for border control were made without these considerations and were grossly inaccurate as a result.

Additionally, Mr Schumacher summarised the limits of biometric technology – use is difficult with certain groups including children, the elderly, and handicapped people. He summarised the results of a recently released study on fingerprinting children carried out by the JRC, indicating that it was possible but that there were certain data quality issues.

Mr Schumacher further discussed fingerprint quality. He noted that a focus of his work is on alternative devices that are more suitable for the particular application case at hand. Amongst these, he noted multispectral scanners and different touchless sensors as well as a recent device with a display in which the traveller sees his or her own fingerprint. In the latter case, he suggested that the immediate feedback could help the traveller to get a better fingerprint image.

Mr Schumacher concluded his presentation by talking about the FastPass project, which has the goal of making sure that the next generation of ABC systems comes with security evaluation. The modalities are currently in the works to ensure that the security aspect is properly addressed, he noted. Work is also ongoing on counter-spoofing methodologies, he said. In this regard, he cautioned that the whole chain of security has to be examined for any newly-proposed systems. Providing the example of facial image matching for authentication, he noted that as well as looking at facial image matching itself, one had to look at the source of the images used and this required evaluation of the whole process right back to original document generation.

In his opening presentation, ***Mr. Andre van der Meij*** *outlined some lessons learned from the project to develop and implement the second generation Schengen Information System (SIS II) that he felt were relevant to discussions on Smart Borders.*

Mr van der Meij started off by explaining his role with the Dutch National Police and involvement with SIS II. He described how the development of SIS II had been a problematic project, with the final system being delivered six years later than planned at a cost 8 times over budget. In the Netherlands, he indicated that the costs of national implementation had risen from 9 million to 27 million euro. He noted that an audit published by the European Court of Auditors on 19th May 2014, titled "Lessons from the European Commission's Development of the Schengen Information System" crystallises many of the reasons for the problems encountered. He presented the lessons as a cautionary tale and strongly recommended that anyone starting work on large scale IT projects read the full report. He suggested that while it does focus on the main issues, the reality was actually even more complex.

Fundamentally, Mr van der Meij argued, the issues arose not because the system itself was complex but rather because the project was managed in a complex environment. He noted that everybody in the project made mistakes: the European Commission, Member States, Council bodies, companies and others.

He went on to present important recommendations from the audit:

1) that any timetable be based on a technical analysis. For SIS II, the original deadline of 2006 was not feasible, he said. It had never been based on a proper technical analysis;

2) that all projects be integrated into corporate IT governance agreements and that in-house expertise be used to the full extent. He added that IT project management is not something anybody can do and expressed hope that eu-LISA, a new organisation with professionals, could make a difference in future developments such as Smart Borders;

3) to ensure the business needs and the views of the end users are taken into account in decision making. In this regard, Mr van der Meij suggested that developers need to look at systems at their points of use while in a European context, Member State delegates making decisions must also be experts and understand business needs;

4) that the business case be approved before progressing from project initiation to project planning. Noting that this is all a part of normal project management, he expressed personal surprise that in the case of SIS II there had never been a proper project initiation document. Thus, the business case was never clear, the scope of the project remained unclear, and roles and responsibilities were not clearly defined, he said;

5) that planning be appropriately managed. He noted that this was one area in which SIS II struggled, with stakeholders having to wait months for Council decisions. He expressed his hope that for Smart Borders, a better solution would be found for planning and that planning could be managed within the project;

6) that key project decisions be documented in a decision log, making them easily traceable. He elaborated that this is about project documentation, but also methodology. He emphasised that its not only about decision logs, but also risk logs, issue logs and the rest of the documentation that an IT project of this kind needs. He noted that all of these logs should be kept and should be easily accessible. He explained that within SIS II, there were abundant meeting minutes and presentations to go through in order to find the sources of decisions. He stressed the importance of a documentation management system;

He went on to elaborate the need to wait until the legal basis is accepted or approved and expressed reassurance that this is something that is being talked about within the context of Smart Borders. Mr van der Meij said that while this will definitely be helpful, it must be remembered that the legal basis only presents a limited set of requirements and that these will have to be developed. For SIS II, he warned, requirements were accepted without being mature, and then repeatedly changed in the development phase. Mr van der Meij surmised his point by saying that if changes have to be made later on, it will take additional time and money;

7) that there be effective global coordination when a project requires the development of different yet dependent systems by different stakeholders. He elaborated by saying that within SIS II, one of the mistakes made was believing that a project of this kind can be managed by sending 30 project managers to Brussels once a month. Mr van der Meij emphasised the need for daily project management. He added that the board should include all stakeholders including the EU Presidency and industry;

8) that large-scale IT systems be developed using interoperable building blocks. This, he noted, should mean that elements can easily be re-used and prevent vendor lock-in. He emphasised the need for design, which will cost extra money and time, but should provide benefits later on. Also, he noted, the components can often be re-used in other projects.

Mr van der Meij's final recommendation was to pass the lessons learned from the Court's audit to DGs and EU institutions, Agencies and other relevant bodies.

Discussion session

The panellists continued discussions and responded to a variety of queries and comments from attendees. The main topics considered included:

- Whether the required technology exists and whether we can use existing solutions or must wait for future developments.
- Which biometrics are most appropriate for Smart Borders
- How Smart Borders will integrate with existing systems
- Whether the budget and time available for the pilot is sufficient
- Whether Smart Borders will be a success.

Whether the required technology exists and whether we can use existing solutions or must wait for future developments.

In response to a query from the Executive Director of eu-LISA, Mr. Krum Garkov, about whether we have sufficient technology available to make Smart Borders work as required, Mr Schumacher expressed his belief that the technology is available. He suggested that success would be a matter of smart selection. He reiterated his earlier point that there is no easy way to extrapolate from one application case to another and decisions would have to be made afresh. He stressed the need for full reflection on the real application case before entering a call for tender. He referenced his earlier presentation in which he exemplified that using biometrics for law enforcement and border control is very different. Nonetheless, he assured that there is no need to start from scratch and develop completely new technology.

He continued by saying that the list of lessons learned from SIS II clearly demonstrates that it is more a problem of processes rather than technology. From the standpoint of technology, he expressed his opinion that SIS II is a simple database for which the technology has existed for 30-40 years. The reason that it took so long to develop a functional system, he said, had nothing to do with technology.

Mr van der Meij agreed on the latter point, stating that before any steps are taken to begin development, requirements need to be clear. Development, he suggested, is not so much about technology but mainly about processes. In relation to Smart Borders, he proposed that perhaps the border control process has to be redesigned, with the current sequence being reconfigured to maximise efficiency in line with technical possibilities, and this, he suggested, was because of a doubt regarding the readiness of some technologies. At the moment, there is no system that does a 1:n check in 5 seconds as would be desirable according to the current sequence, he said. Without change, he suggested that there might well be huge queues at the borders. He added that this all has to be discussed and put on paper before there's a call for tender. It is a long process, he added.

Mr Brandes suggested that this meant that the technology is not yet fully available and noted that this was indeed his own personal opinion. Mr Rahmun generally agreed, expressing his own sceptical opinion, particularly regarding biometrics. In his own experience looking at the state of play of mobile devices for a previous project, he added that no suitable solutions had been found. He suggested that it is not certain that the industry will be ready by 2020 and that there will be devices that are powerful enough to meet the demands. Mr Rahmun extended the question to the delegates from the industry. He stressed the importance of having an answer to these questions before starting to devise a fall back plan.

Mr Garkov stressed the importance of this part of the discussion and stated that it has become evident that the panel is convinced that today's technology isn't quite sufficient. Mr Garkov pondered whether looking at Smart Borders as purely technological is a mistake, suggesting that we could rather view it as the enabler that allows for improving the processes of border management. He proposed that Smart Borders is perhaps an ideal opportunity to harmonise and standardise border management processes in order to make the best use of existing or future technologies.

The panellists continued by assessing some of the technologies that they consider might be of use in Smart Borders, pending of course the definition of requirements that still remain unclear. Mr Rahmun suggested that touchless fingerprint devices could the answer for increased performance but warned that there still is no reference system to prove it. Mr Schumacher agreed that touchless sensors would be the technology choice of the future. However he went back to what was said before with regard to defining the objectives. He suggested that there is a long distance between a political statement of an objective down to technical requirements and the route must be navigated carefully.

A representative from Morpho continued by suggesting that such devices should be tested in the pilot to examine their applicability in the field and to highlight what more might be needed. He agreed that requirements need to be defined but expressed his view that no matter what, surely the devices will be available by 2020 or even before. He also addressed a point made earlier regarding 1:n searching at the border and stated that they can search databases of 450 million in 5 seconds already.

Mr van der Meij responded by saying that even if there is a device that can do a query of a fingerprint in 5 seconds, this is only one part of the requirement. The other part, he noted, is how many queries can be done at the same time? Requirements, he repeated, are very important and they have to be complete.

Mr Schumacher went on to talk about a study that is currently being conducted on behalf of the European Parliament that focuses on fingerprints in SIS II and the general feasibility of using fingerprints in SIS II. He noted that such fingerprints from criminals might sometimes be checked at border control. He wondered whether a case might be made for searching latent fingerprints from crime scenes despite their low quality and wondered whether mistakes made as a result would be the fault of the business case or the technology.

Mr Marc Sulon reassured that comparing travellers' fingerprints to the fingerprints in SIS II is not the objective. The EES, he repeated, is not for law enforcement purposes, but for more efficient border management. He expressed his belief that every problem has several phases: the difficulties could be reduced not only through the technological means but also by defining the business case. He provided the example of reducing the size of a search database based on visa status, sex, age etc. so that accurate identification of undocumented people in the Schengen area becomes possible with existing technologies, perhaps even with biometrics such as facial images.

A representative from Exentia provided a final word within this section, referencing the experience of US-VISIT where an industry group was setup to refine requirements for technologies that didn't exist at the time. He suggested that this could be one possible approach for Smart Borders and expressed his opinion that the industry would be more than happy to help.

Which biometrics are most appropriate for Smart Borders

Mr Brandes wondered whether fingerprints are needed or whether there are means of utilizing other biometrics like facial imaging.

Mr Rahmun noted that there are EESs without face recognition while there are others that use 4 or 8 fingerprints and yet others that use no biometric at all. Thus, he stated, there are a lot of possibilities. The use cases should be the starting point, he said, and the decision on whether something is possible should be made after that step has been taken. He added that depending on the retention period, the database would be enormous. On this basis, he wondered whether there would be sufficient time for all processes to run. In consequence, he wondered what manual work would have to be done on a national basis.

Mr van der Meij stated his belief that one should examine the overall picture and not look simply at Smart Borders as an island. He wondered what might happen if in future it became possible to query SIS II with fingerprints from every traveller crossing the border. To allow for such developments, he suggested that it would be good to start using fingerprints in the EES as well.

How Smart Borders will integrate with existing systems

The moderator wondered how to integrate Smart Borders systems into existing infrastructure and whether this should be done at the national and/or central levels.

Mr Rahmun said that the responsibilities should be shared. He noted that there are more than 20+ Schengen border control applications that all look different and have different processes. He suggested that Smart Borders might provide an opportunity for the Schengen border process to be redefined in order to find synergies. He emphasised that the job of integration cannot be underestimated. The user interface is what the border guard sees and what they rely on, he noted, not just the central system.

Mr van der Meij suggested that current border control systems or police applications already include integrated querying for the most part. He provided the example of the Netherlands where there are 26 different police forces with 26 different databases that can be all queried at once. The EU, he noted, has far more data and he argued that it should be possible to query data from the entire Union. With such an approach, he additionally noted the need to examine means to highlight which alerts to take seriously when multiple systems respond. There are a lot of challenges, he noted, even without Smart Borders.

Whether the budget and time available for the pilot is sufficient

In response to a query from a representative of the Czech police on the matter, Mr Rahmun expressed his feeling that the budget of 3M euro and allocated time period of one year may well not be sufficient. Mr Schumacher suggested that it would all depend on the business case for the project. The real challenge, he noted, is the integration. If one begins to consider integrating the 13-14 databases involved and testing the ability of the border guard to respond to information from all – the 'real case', as he put it – then he suggested that it would likely be impossible. He expressed his strong opinion that a Smart Borders pilot should pilot the situation that will be present in the future and must involve border guards.

Mr van der Meij agreed and suggested that for a full pilot, one year and 3 million clearly isn't enough. He suggested that there should be several pilots and proofs of concept, arguing that this may be a way to properly define requirements. There are so many unknown factors, he noted, suggesting that one can only learn by doing and probably in several pilots.

Whether Smart Borders will be a success

Responding to a direct question from the moderator, all panellists felt that Smart Borders would be a success, although for different reasons. Mr van der Meij felt that sufficient money would be put in place to make it work while Mr Schumacher felt that it the establishment of an appropriate governance structure would be the key to success. Mr Rahmun felt that it would be the engagement of all stakeholders that would help to drive any project to satisfactory conclusions.

In summarising the discussion, Mr Brandes emphasised the most salient points made.

A point made repeatedly, he said, was that definition of clear requirements and a proper business case from the very beginning would be a key success factor.

Secondly, he noted that there are doubts about the technology being ready for Smart Borders at this stage. Some people are sure that the technology has its limits, he noted. He expressed his expectation that the pilot next year would contribute to further clarification and point out the limitations. He reiterated Morpho's commitment to make the technology available by 2020 in jest.

He noted that the integration with existing systems was identified as an important challenge in discussions, both at central and national levels. In this regard, he suggested that it will be necessary to take a step back and look at overall processes and procedures in order to integrate the new systems into the existing framework.

He touched on a conclusion of the first panel discussion that we must build on existing infrastructure but also take account of lessons learned from previous experiences. He chose to enumerate the need for proper project governance as one lesson that will particularly be needed to make this project a success. He finished by noting that the panellists agreed that Smart Borders would be a success.

Meeting conclusion

Mr Krum Garkov, Executive Director, eu-LISA

Mr Garkov provided his conclusions to end the meeting. He expressed his own excitement regarding the ideas and views shared during the presentations and discussions and noted some points that were particularly salient for him.

Amongst the points, he enumerated the strong intent and strong expectations for Smart Borders that had been conveyed. This starts with the pilot, he noted, and he suggested would extend through to the full-scale implementation. Cues from the past have to be taken and the value of existing technology, systems and solutions has to be preserved, he said.

During the presentations and discussions, he noted that it became clear that there are numerous technical questions still open. He expressed an expectation that the study and pilot would address many of them. He felt that an important message provided was the strong call for standardisation. He described how Smart Borders as an initiative represents a perfect opportunity to look beyond the technicalities and to get a closer look into the way borders are managed today, to look for harmonisation and standardisation of processes and overall to increase the actual added value of Smart Borders as a technological initiative. In this sense, Mr Garkov expressed his belief that Smart Borders can not only make border management more efficient and the travellers' experience better, but also facilitate the future development of a European integrated border management system.

Mr Garkov also sought to place the discussion at the conference into the overall European context. He noted the relevance of the day's discussions to the European Commission's renewal of the internal security strategy suggesting that Smart Borders could be one of the key drivers in the redefinition of the role of technology in internal security. He conveyed his belief that Smart Borders could significantly contribute to EU internal security in itself. He suggested that there was an evident need for a well-structured technology strategy that complements the internal security strategy. The strategy, he said, would define a clear road map of the present capabilities of technology and define the direction and priorities for development and utilisation going forward. eu-LISA, he said, is confident that it has the knowledge and capabilities to lead and contribute to the afore-mentioned technology strategy, to assist and facilitate discussions on how technology can be utilised more efficiently and how everyone working together can maximise the added value of technology.

Mr Garkov also noticed that a significant part of the discussion was on how to deliver the pilot and whether something meaningful could be delivered bearing in mind the present limitations. He felt that these are valid questions but felt that the Agency was nonetheless primed to deliver what was required.

Finally, Mr Garkov thanked all the speakers and contributors, stating that it was a great experience from which everyone would certainly have learned. He also expressed confidence that after these discussions, everyone would be more focused and efficient in future work. He closed by stating that eu-LISA is embarking on a challenging and interesting journey but one that he is sure will provide a result that is meaningful. The Agency, he stated, is very excited in this regard and looks forward to making its contribution.

Conference Organiser:
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eu-LISA is responsible for managing and promoting information and communication technology (ICT) as a key success factor in the implementation of the Union's policies in the area of freedom, security and justice.

The Agency manages the largest information system for public security and law enforcement cooperation in Europe (the Schengen Information System), the system that allows Schengen States to exchange visa data relating to applications for short-stay visas to visit or to transit through the Schengen area (the Visa Information System) and the large-scale fingerprint database that assists primarily in the processing of asylum applications (Eurodac) on behalf of the Member States and European institutions.

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