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NOTE

From:	General Secretariat of the Council
To:	Working Party on Information Exchange and Data Protection (DAPIX)
Subject:	Summaries of eu-LISA Annual Conference and eu-LISA Industry Roundtable

Delegations will find in Annex summaries of the eu-LISA Annual Conference and the eu-LISA Industry Roundtable wich took place on 16 and 17 October 2019 respectively.

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The new information architecture as a driver for efficiency and effectiveness in internal security

eu-LISA Annual Conference

16 October 2019

Tallinn, Estonia

Summary

On 16 October 2019, the European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice (eu-LISA) hosted its 6th Annual Conference *The new information architecture as a driver for efficiency and effectiveness in internal security* in Tallinn, Estonia. The conference was organised with the support and engagement of the Finnish Presidency of the EU Council.

The conference was attended by 180 participants, from Member States, Schengen Associated Countries, EU institutions and EU Agencies, as well as industry and academia from across Europe and the United States.

❖ *Keynote speeches*

The keynote speakers addressed the fact that internal security, border management and migration management are going through fundamental transformations since they have become highly dependent on the availability of comprehensive and timely information as well as modern technologies in general. At the same time, all three are converging very quickly. In order to deal with the dual challenge, the European large-scale IT systems should be made smarter and the information they contain should be made available through advanced technologies and streamlined processes.

Participants agreed that we are entering an "interoperability era", which will bring down the artificial silos of large-scale IT systems and change the way law enforcement officers, border guards and migration officers work and cooperate. A well-defined information architecture is an opportunity to take the work of our internal security community to a qualitatively new level.

At the same time, interoperability is not a mere technical matter, it is a question of mind-set as well as a political commitment. It will ensure that our services work together and complement each other to address the concerns of the people living in the EU. The new information architecture should serve European citizens and therefore, close cooperation between stakeholders is needed to ensure that technical solutions in the Justice and Home Affairs (JHA) domain follow best practices and common standards.

❖ *Session 1 - Impact of the new information architecture on internal security: efficiency gains and challenges*

The session focused on how the already existing large-scale IT systems, the European Dactyloscopy Database (Eurodac), the Schengen Information System (SIS) and the Visa Information System (VIS), are going to facilitate the daily work of a wide range of public authorities when joined by the systems currently being under development, namely the Entry/Exit System (EES), the European Travel Information and Authorisation System (ETIAS) and the European Criminal Records Information System for Third-Country Nationals (ECRIS-TCN). The fact that the future interoperability infrastructure will allow faster access to data and will simplify the processes that national authorities perform to access the systems was also discussed. The planned technical implementation of the new information architecture was presented in detail. Participants highlighted the need to improve the quality of data analysis and seek for more interoperability. The discussion brought forth the possible added value of interoperability between EU large-scale IT systems and Interpol databases, such as the Stolen and Lost Travel Documents database (SLTD) and the Travel Documents Associated with Notices database (TDAWN).

❖ *Session 2: Effects of digitalisation on the collection and processing of data for law enforcement purposes*

The session focused on digitalisation as opposed to traditional paper-based information exchange of law enforcement authorities. Participants agreed that digitalisation has become wide-spread in the majority of European law enforcement authorities and is crucial in dealing effectively with cross-border cases. A need for more coherent approach to equipment and infrastructure was stressed with a reference to common standards and best practices. The need to improve direct exchange of operational data at EU level, including a mobile strategy and a secure chat app for frontline policing were pointed out. It was also noted that digitalisation at EU level and EU funding trigger digitalisation processes at national level and pave the way for innovation in the ICT sector and in national authorities. Participants debated on the questions related to big data analyses, new working methods, data encryption, automation, machine learning, rules for processing of personal data and the need to streamline business processes.

❖ *Session 3: How will the new information architecture support border and migration management*

This session highlighted how the new smart and interoperable border management systems, namely EES and ETIAS, complemented by the future upgrade of VIS and establishment of interoperability components, would modernise border management and serve as a common platform to ensure a proper screening of the vast majority of third country nationals crossing the EU's external borders. The new systems will improve the quality and efficiency of border controls, while not causing additional burden to bona-fide travellers. The upgraded and new systems as well as the new interoperability architecture will contribute to speeding up, facilitating and reinforcing border check procedures and will streamline end-user workflows through automation of border crossings, more reliable identity checks and revisited business processes. The participants also highlighted the need for fast information exchange in relation to asylum procedures and more coordination in the field of standards.

❖ *Session 4: Effects of digitalisation on data analytics and the use of artificial intelligence in JHA domain*

Participants discussed that digitalisation is an increasingly complex environment due to rapid technological developments and high amounts of information. Artificial intelligence (AI), if used and designed properly, provides many new, so far unknown, opportunities. However, at the same time, it generates new and unknown threats. Member States should seek coordinated ways of working with AI to avoid security gaps, ensure digitalisation and automation of workflows. Ethical aspects of the use of AI were highlighted with a specific reference to fundamental rights and principles. Finally, the Estonian AI task force presented some of its lessons learnt including usefulness of open sources, limitation on automation, scalability, data protection and data governance. Particular stress was given to the fact that overregulation of this area should definitely be avoided.

❖ *Conclusions*

The final remarks reiterated that internal security is in a significant transition. The success of stakeholders depends more and more on the quality of data analyses, risk assessments and the ability to work with large amounts of information. Common challenges need to be faced with an interoperable mind-set and technical solutions should comply with common standards and best practices. eu-LISA will remain an indispensable partner for all stakeholders, ensuring operational management and development of the large scale IT systems, developing further the concept of interoperability (including standards and best practices) and internal security related R&D projects.

Towards practical implementation of the new JHA information architecture

eu-LISA Industry Roundtable

17 October 2019

Tallinn, Estonia

Summary

On 17 October 2019, the European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice (eu-LISA) hosted its 11th Industry Roundtable **"Towards Practical Implementation of the New JHA Information Architecture"** in Tallinn, Estonia. The purpose of the event was to discuss concrete solutions for implementing the new interoperable architecture that are aligned with legal, functional and technical requirements. It is time to move from theoretical discussions to planning the practical implementation of the new information architecture. The new information architecture should eventually result in a seamless interoperable functioning of dedicated systems in the Justice and Home Affairs (JHA) domain, facilitating the work of practitioners. Collaboration with industry is paramount in tackling the tasks and challenges ahead.

The event gathered over 100 participants from 51 different organisations and 19 countries, representing the international border management and security industry, EU Member States, EU Institutions and JHA Agencies as well as academia.

> ❖ *Session 1 – New information architecture for the JHA domain: trends and developments*

The first session provided a high-level overview of the developments in regard to the implementation of interoperable information architectures in the EU and the USA. Speakers noted that silos are a feature of IT systems across the world, and that breaking the silos is essential to ensuring enhanced and interoperable operation of the systems and effective performance of responsible authorities.

The first presentation, delivered by eu-LISA, focused on the recent developments in the area of interoperability in the EU JHA domain outlining the core components of the interoperability architecture, including the European Search Portal, the shared Biometric Matching Service, the Common Identity Repository and the Multiple Identity Detector. One of the key results of a recent eu-LISA study supporting the development of interoperability architecture in the JHA domain was the proposal to start with the integration of the existing systems and eventually move to unification involving all the systems. A service-oriented architecture with application programming interface (API) was recommended as the preferred option for implementation. It was emphasised that, albeit eu-LISA taking the lead role in this process, interoperability remains a shared responsibility. Hence, the best possible outcomes can be achieved only through effective collaboration between the Commission, EU Member States, EU JHA Agencies and other stakeholders.

Another presentation on the development of the new information architecture, given by the US Customs and Border Protection agency, outlined recent interoperability oriented developments for border management in the USA. In particular, the importance of cross-functional and an agile approach to work, including close collaboration between the developers and users of the systems, was emphasised. The key aim is to simplify the processes and workflows for the users, thus improving the speed and quality of decision making. The presentation also addressed the recently introduced Traveller Verification System, including the use of biometrics upon exit (at the moment in a pilot phase), which relies on facial recognition using cameras placed at airport gates. In particular, the introduction of the use of biometrics at exit points permitted a significant reduction in the airport arrival-exit cycle time, as a result allowing the introduction of additional flights. It was noted that privacy and security were built into the system by design, including limited retention of facial images as well as a range of enhanced security measures (e.g. data encryption in transit and at rest; device access restricted to authorised personnel; biometric templates separated from biographic data, associated only with a unique ID).

❖ *Session 2 – Information Flows for Seamless Stakeholder Cooperation*

The second session included two presentations from industry, offering their views on interoperability in the JHA domain. The presentation from WCC Smart Search and Match introduced the concept of hexagonal architecture, which allows the tackling of some of the challenges, which make search and match difficult, e.g. siloed systems; the lack of compatibility between databases and interfaces; the necessity to integrate different data types (e.g. biographical and biometric). The key benefit of the proposed hexagonal architecture is that it is data and vendor agnostic, thus allowing the achievement of interoperability between the existing systems and the possibility of a single-search interface.

The presentation from SITA suggested that the ultimate aim of interoperability is seamless travel. Given the global nature of travel, there is a need for an interoperable and collaborative approach across the world. To achieve seamless travel, biometric identification should be enabled across all processes (i.e. from border crossing to boarding, exiting and self check-in). Furthermore, other sources of information should be used to facilitate the travel process (e.g. social media). It should also be considered whether alternative sources of transportation (e.g. Uber) and of data (big data) could be relevant to migration management.

The participants agreed that a more collaborative approach, including a wider scope of actors, is needed to achieve a high level of interoperability.

❖ *Session 3 – From Opportunities in Innovation to Technical Implementation*

The third session focused on practical solutions for data management and analytics. The presentation from SAS focused on the possibilities to integrate solutions for data analytics based on artificial intelligence and machine learning in the interoperability architecture. The presentation emphasised the importance of modularity and micro-services architecture to ensure efficient and effective data analytics and to optimise the use of resources. SAS proposed the micro-services architecture, utilising API and consisting of 180 micro-services, as a viable alternative to the existing silo approach.

The presentation from IDEMIA continued along the lines of the previous presentation, focusing on efficient solutions for the new information architecture, based on standard identity and biometric solutions, and emphasising the growing need for specialist solutions. However, domain-specific products can often be integrated with standard COTS. It was highlighted that the Common Identity Repository and the Multiple Identity Detector are good candidates to benefit from leveraging business-specific COTS, especially given that specialised COTS for business-specific matters encapsulate strong business expertise, include the results of long-term research and development, and represent a real value-added as they are widely field-proven.

The participants of the session agreed that the application of standardised solutions integrated with specialist systems is the most effective way to address the challenges at hand.

❖ *Conclusions*

The Industry Roundtable offered a great opportunity for the stakeholders to exchange views and perspectives on the future challenges in developing interoperable solutions in the EU JHA domain, as well as the potential gains to be attained. The development of interoperable architecture is an important step towards seamless cross-border travel. It is also an important step towards the implementation of modular vendor-agnostic solutions, integrating standard and specialist systems. However, this can only be achieved through effective collaboration between the Commission, EU Member States, EU Agencies, industry and other stakeholders.

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