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From: eu-LISA

To: Working Party on JHA Information Exchange (IXIM) / Mixed Committee
(EU-Iceland/Norway and Switzerland/Liechtenstein)

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Subject: Roadmap for standardisation for data quality purposes
– Fourth progress report

With a view to the Working Party on JHA Information Exchange (IXIM) on 13 July 2023, delegations will find in annex eu-LISA's fourth progress report on the implementation of the action plan for the roadmap for standardisation for data quality purposes.

PUBLIC

Roadmap for Standardisation
for Data Quality Purposes
4th Progress Report

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1. General context

Internal security, border management and migration are going through a fundamental transformation:

- First, they are information driven and today, information is the most valuable asset;
- Second, their efficiency is totally dependent on digital technologies, infrastructure and large-scale IT systems;
- Third, there is a rapid process of convergence between border management, migration management and internal security.

Therefore, there is a need for a paradigm shift from them being built on physical assets to being built on digital assets, and from a silo-based approach to integration and information exchange.

Digital technologies will be key enablers and success factor of this change. The information, operational and technical silos created in the past are no longer fit for purpose. There is a need for a new integrated information architecture for internal security, border management and migration. It should consolidate the capabilities of digital technologies and available information and provide an extended and powerful tool for practitioners, increasing the efficiency of their daily work.

This need has been clearly recognised by the EU. In recent years, a crucial element of its response to it are the efforts to address existing information gaps and to strengthen and develop further information exchange and management.

With these objectives in mind, in recent years the EU has launched a number of new initiatives, in particular:

- The European Entry/Exit System (EES);
- The European Travel Information and Authorisation System (ETIAS);
- The European Criminal Records Information Systems – Third Country Nationals (ECRIS-TCN);
- Interoperability architecture for the large-scale IT systems in the JHA domain.

These initiatives aim to make information exchange and information management in the European Union more efficient and comprehensive and to deploy a new information architecture for internal security, border management and migration in the EU. However, once deployed, the ability of this new information architecture to deliver the anticipated operational benefits will depend largely on:

- First, the data entered in the systems needs to be of the best quality possible;
- Second, end-users should have timely, secure and comprehensive access to information derived from the data stored in the systems.

Data quality and numerous interconnections between national and central IT systems require common baseline standards in order to effectively support the associated business processes in all involved business areas (visa, border, immigration, law enforcement). They will also support a secure implementation, which is crucial to compensate the increasing number of threat vectors and relevant cyber security risks.

1.1. The Roadmap for Standardisation for Data Quality Purposes

Against this background, at the initiative of the Croatian Presidency, the Working Party on JHA Information Exchange (IXIM) held a comprehensive discussion on the need for further standardisation in certain technical and operational areas. As a result of the exchange, the initial proposal for a roadmap was presented at the IXIM Working Party meeting in February 2020¹. As a follow-up to this initial proposal, a detailed proposal containing the structure and main principles of the roadmap was proposed to the IXIM Working Party in April 2020. Following the discussion at the IXIM meeting in July 2020², eu-LISA has been entrusted to coordinate and develop the Roadmap for Standardization for Data Quality Purposes.

¹ 5924/20

² 7125/20

The Roadmap addresses key issues pertaining to the efficient and effective operation of the new interoperability architecture, namely:

- The ability of the Member States to feed high-quality data into the relevant EU information systems;
- The ability of the Member States and relevant EU agencies to get seamless access on the ground to the information provided via the new interoperability architecture.

To address these issues, the Roadmap covers the following three thematic areas:

- Thematic area 1: Biometric and alphanumeric data quality and relevant standards;
- Thematic area 2: Systematic assessment of relevant equipment, including through testing;
- Thematic area 3: Cyber security.

The Roadmap defining high-level objectives and priorities was endorsed by the IXIM Working Party in November 2020³. In order to support the practical implementation of the Roadmap, an Action Plan defining specific actions, responsible parties, as well as timelines for the implementation of actions was proposed. The Action Plan was adopted by the IXIM WP in June 2021⁴. As agreed in the IXIM WP, reports on the status of implementation of the Roadmap shall be submitted twice per annum.

³ 11824/2/20 REV 2

⁴ 9105/21

1.2. Progress Reports on the Action Plan

The Action Plan contains 54 actions. Three update reports have already been submitted, explaining the tasks carried out by the different stakeholders in order to implement each of the actions defined in the plan:

- The first update report⁵ was submitted in November 2021.
- The second update report⁶ was submitted in June 2022.
- The third update report⁷ was submitted in November 2022.

The present document is the fourth update report, providing information on all the 54 actions.

The report was shared for consultation with the actions' owners and contributing stakeholders on EU level and the Member States (via the Swedish Presidency). The input received from all stakeholders is included in the table below.

In order to simplify the review of the table, the following colour code is applied:

- “Status” column:
 - *“Implemented”* status: the box is shaded in dark green colour
 - *“Ongoing”* status: the box is shaded in light green colour
 - *“Not yet started”* status: the box is shaded in light orange colour
- **New information** added to the previous progress reports is provided in **blue colour**.

Please also note that, for reference, at the end of the document the reader can find a list of acronyms.

⁵ 14203/21
⁶ 9476/22
⁷ 15203/22

2. Summary table on the updates for the reported actions

2.1. THEMATIC AREA 1: Improving the quality of biometric and alphanumeric data in the EU JHA Large-Scale IT systems and their interoperability

Objective 1: To ensure high biometric sample quality across all systems using biometric data.

Objective 2: To improve the quality of data provided through manual input in the central systems (i.e. SIS, VIS, EES, ETIAS, ECRIS-TCN, Eurodac).

1.1 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Assure proper alignment with the international standards	2022-2027	eu-LISA	Europol, Frontex, EC DG JRC, MS	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> • Since the beginning of 2021, eu-LISA has been involved in the work of the ISO sub-committee 37 (ISO SC-37) focusing on biometric technology to support interoperability and data exchange among applications and systems. eu-LISA is monitoring the developments in all 5 working groups (WGs) of SC-37, and actively contributing to WG3 (standardising biometric interchange formats) and WG5 (focused on the standardisation of biometric testing and reporting). • In Q1-2023, eu-LISA has led together with DG JRC (see below) the launching within WG3 in SC-37, of two other biometric quality algorithms, for fingerprints (i.e., latent fingerprints) and palm print. Once fully developed, these algorithms will become ISO standards' reference implementations in the future. • In particular, eu-LISA actively participates in the evolution of the ISO/IEC 29794-5, for which the reference standard implementation of a face quality algorithm is ongoing, referred to as OFIQ (Opensource Face Image Quality). The aim is to provide a vendor-agnostic scalar metric, similarly to NFIQ in fingerprints (NIST Fingerprint Image Quality), for computing face image quality automatically. The goal of eu-LISA is to incorporate it to its biometric products portfolio. • eu-LISA is actively involved in the activities of the European Association for Biometrics (EAB), as well as the National Institute of Standards and Technology of the US (NIST). Both of these organisations play an important role in the development and adoption of international standards in biometrics, which are of direct relevance to eu-LISA core business. • eu-LISA worked on the biometric quality algorithms used within the shared Biometric Matching Service (sBMS) and the EES Users Software Kit (USK). For both fingerprints and facial images, the algorithms shall be aligned with international standards according to the specific regulations. eu-LISA has been working with the sBMS contractor to align to the ISO standards. • Together with the Swedish Agency for Migration, eu-LISA has conducted a pilot project for beta testing the USK, based on VIS (Visa Information System) data. Over 20.000 enrolments (collected between February-May 2022) were analysed. In Q1 2023 the pilot project report was presented with the following main conclusions: 				

- Fingerprint acquisition:
 - The tested quality strategy used into sBMS USK would improve the current capture process on VISA application workstations by focusing only on VIS records needing recaptures;
 - The proposed Quality threshold at 15 provides a rate of recaptures that is consistent with the one measured on the VIS images subset.
 - The VIS USK real condition Pilot test confirms that it will improve the quality of the records and decrease the capture process time;
 - MS are advised to also warn the operator in the case of a fingerprint NFIQ-2 score of zero or when the NFIQ-2 algorithm fails to measure the quality of an image. This will improve the validity of the missing finger rate.
- Face acquisition:
 - The sBMS USK Pilot validates the sBMS quality assessment for VIS Facial Images as the global quality of the data set is of good quality with only 0.5% of the best capture attempts at Low quality;
 - MSs are advised to take in consideration the following recommendations:
 - Request their ESP to integrate the USK V6.2 or above version to benefit from sFIQ-2 version with new measures and thresholds;
 - To enlarge the transmitted Facial Image sizes to reach the EES regulation requirements;
 - To enlarge the captured Facial Image resolution for the Inter-Eyes Distance to be above the required 120 pixels and then comply with EES regulation recommendation;
 - To add to the quality re-capture policy – currently based on ICAO checks only - the USK V6.2 low quality detections to ensure that all Facial Images will be accepted by sBMS central site without any low-quality notification;
 - The VIS USK Pilot did not show any negative impact of using the sBMS USK in VIS Facial Image capture process.
- eu-LISA organised the ISO/IEC/JTC1/SC37 meeting in Tallinn, in June 2023 to keep contributing to the standardisation community.

Frontex

- Frontex follows the technical specification / standards as set by eu-LISA

Europol

- In the implementation of the JHA large scale IT systems, Europol is following the technical specifications/standards foreseen by eu-LISA.
- Europol will take part in Q3 2023 in a pilot project for using the USK in ECRIS-TCN, with similar objectives to the pilot project reported above regarding the use of the USK in the context of VIS together with the Swedish authorities:
 - Evaluate the performance of the USK in real operational conditions.
 - Assess the level of conformance of the fingerprint and face images available in ECRIS-TCN with the requirements set for the system.

EC DG JRC

- DG JRC and eu-LISA launched in December 2022 a procedure to propose and develop an ISO standard for finger-mark image quality. Following first positive feedback from ISO SC37 in January 2023. A first meeting of the ISO ad-hoc group took place mid-April with the members of the SC37 WG3 willing to contribute to the proposal. A first draft of the proposed standard for ISO will be presented at the annual SC37 conference in Tallinn in June (hosted by eu-LISA). The proposal is supported by algorithms developed by DG JRC.

<p>Czech Republic</p> <ul style="list-style-type: none"> Czech Republic is following the technical specifications/standards foreseen by eu-LISA. <p>France</p> <ul style="list-style-type: none"> France is preparing a new procurement for biometric sensors that will take into account European and international standards. <p>Sweden</p> <ul style="list-style-type: none"> Sweden is following the technical specifications/standards foreseen by eu-LISA. <p>Romania</p> <ul style="list-style-type: none"> The National SIS Center implements the transliteration requirements at the N.SIS level according to the Interface Control Document (ICD) Detailed Technical Specifications (DTS) provided by eu-LISA.
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1.2 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Gather best practices from eu-LISA and Frontex	2021-2023	eu-LISA, Frontex	MS	Ongoing
1.3 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Gather best practices in human-computer interaction in border control and biometric acquisition processes	2021-2023	eu-LISA	Europol, Frontex, EC DG JRC	Ongoing

Actions 1.2-1.3

eu-LISA

- Sept. 2021, visit by eu-LISA of the Entry/Exit System pilot project organised by Frontex in collaboration with the Spanish authorities in La Linea (Spain); results of the pilot presented by Frontex at the Showcase conference;
- Nov. 2021, eu-LISA presented its work on face image quality in a workshop organised by the European Association for Biometrics (EAB), the US Department of Homeland Security Office of Biometric Identity Management (DHS-OBIMS) and the US National Institute for Standards and Technology (US-NIST);
- In April 2022, eu-LISA visited The Netherlands for a demonstration of the EES Users Software Kit (USK). National representatives tested the solution prepared by The Netherlands and provided feedback. eu-LISA provides the USK to the MS and encourages them to use it to ensure proper alignment of biometric quality between the central system and the national side.
- eu-LISA gathered best practices on the use of biometric equipment in the context of different scenarios and workflows. These were shared among the different stakeholders by presentations within the different eu-LISA Advisory Groups and the Biometric Working Group.
- June 2022, eu-LISA attended the final demonstration of the D4FLY EU-funded project (<https://d4fly.eu/>), gathering best practices and real-life operational

inputs in the context of the Entry-Exit system. This information is of high value for the improvement of the existing and future eu-LISA products.

- eu-LISA is collaborating with Frontex in the context of the Multiple Identity Detector (MID) transitional period for both creating a reliable tool to process the future yellow links and for training experts in the manual fingerprint verification.

Frontex

- Since the implementation of the EES Support Package, Frontex has gathered a set of MS solutions and best practices. All the knowledge is stored on a SharePoint folder. For access contact: Fx.support.ees@frontex.europa.eu
- Frontex organised a series of visits at MS BCP to showcase pilot solutions or local implemented solutions (Bulgaria, Spain, France, The Netherlands). A showcase has been organised in Munich devoted to pre-registration solutions, including a mobile app.

Europol

- Europol does not acquire biometrics nor participate in border control, but is following the developments and best practices in Member States.

1.4 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Creation of new and re-designing of the existing workflows based on the actions defined above and operational knowledge/experience	2022-Onwards	Frontex, MS	eu-LISA, Europol	Ongoing
<p>Please see also actions 1.1-1.3 above.</p> <p>Frontex</p> <ul style="list-style-type: none"> • Frontex has developed an EES Support Package to support Member States in their preparations for the entry into operation of the EES. • The package comprises several actions including: trainings, advices to Border Control Posts (BCPs), conference, workshops, pilots, toolkit and others. • Frontex has compiled all the information gathered from the previous experiences in a toolkit for first and second line BCP officers. For access, contact: Fx.support.EES@frontex.europa.eu <p>Czech Republic</p> <ul style="list-style-type: none"> • Czech Republic uses the opportunity of rebuilding national systems due to SIS Recast, EES, ETIAS and IO to re-design national workflows in various national systems (border application, SIRENE application etc.). Data quality by design is one of the architecture principles used. <p>Slovenia</p> <ul style="list-style-type: none"> • Slovenia is preparing mobile solutions for the sBMS and proactively participates in implementing the User Software Kit (USK). <p>Sweden</p>				

- Sweden, whenever suitable and feasible, works with re-designing of existing workflows or business processes in order to streamline workflows and to improve the quality of data.

Romania

- The Romanian Police – International Police Cooperation Centre, has submitted 2 project proposals within BMVI/2022 EU financial instruments:
 - IASOP: Increasing Automation within SIRENE Operational Procedures, budget 674.849 EUR.
 - Implementation of MID transition tool in the SIRENE application and integration with MID, budget 1.041.057 EUR.

So far COM has pre-approved the proposals.

The projects will address current workflow overload issues faced by all staff working in the Romanian SIRENE Bureau. The projects will assure the automatic processes which will result in a minimum intervention and action to be performed by the operators, thus the quality of data will increase and the time response will be reduced.

The main purpose of the second project is to adapt and strengthen of the SIRENE IT system for handling yellow links during the MID (Multiple Identity Detector) transitional period.

eu-LISA

- eu-LISA supported the MS in the creation of new and in the re-design of existing workflows or business processes. This was achieved with various presentations at all levels, including in the Frontiers WP, where the action the topic was decided to be followed up with the MS, especially on the BCPs. Similarly, the topic was raised at the Visa WP, where again the action was noted for the MS Visa authorities.
- From a technical perspective, the Agency creates the conditions for the MS to test their processes/workflows, by providing the associated environments, per core business system (CBS); the latter allows the MS to test these processes end to end, with their respective National Systems and the associated ICT solutions and train their end users accordingly.
- Moreover, the Agency is addressing the aspect of the ‘comprehensiveness’ of the testing together with the MS in its Governance bodies. This aspect includes the testing and training on the operational business processes. Various expert groups are and will be organised to continuously address this point, and thus further support the MS.
- As per applicable Interoperability Regulations and the associated data quality implementing act, eu-LISA together with the MS, will agree on the process and test common data quality rules/standards. Thus, with the implementation of the overall interoperability architecture, common data quality rules/standards and the associated reporting, will further support this effort (please also see actions 1.6 & 1.7).
- Finally, the Agency has identified which workflows cannot be supported by some MS. A study was performed in 2019 addressing the centralisation of certain services and thus remove the complexity from national level. The community re-opened the point lately which will have to be covered (financial and human resources to the Agency) before proceeding to its implementation.

Europol

- Europol does not enter/modify any data in JHA large scale IT systems, but follows the developments closely and adapts Europol workflows where necessary/to the extent feasible.
- Within the context of implementing the tasks stemming from different Regulations on JHA large scale IT systems, Europol has developed or is in the

process of developing workflows in close cooperation with Member States, eu-LISA and Frontex (namely SIS, ETIAS) and adapting internal workflows (access to data stored in JHA large scale IT systems).

- Europol is also working on the enhancement of its biometric capabilities to make full use of the opportunities provided by the Interoperability agenda as well as improving the core services provided to Member States.

1.5 Sub-action: Involvement in the development of international standards in the area of biometrics	Timeline: Continuous	Owners: eu-LISA, MS	Contributors:	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> • Please see action 1.1 above. • eu-LISA has launched a new work item within the ISO/IEC/JTC1/SC37 in order to standardise the finger-mark (i.e., latent fingerprints) quality assessment. <p>Czech Republic</p> <ul style="list-style-type: none"> • Czech Republic participates in eu-LISA's Biometric Working Group and other appropriate fora (e.g. eu-LISA Industry Roundtable, Europol's Information Management Forum, IO AG etc.). Czech Republic also proactively participates in implementing User Software Kit (USK) tool for EES, VIS and ECRIS-TCN biometric processes. <p>France</p> <ul style="list-style-type: none"> • France is preparing a new procurement for biometric sensors based on the latest European and international standards. <p>Germany</p> <ul style="list-style-type: none"> • Germany and France have sent eu-LISA a comprehensive list of questions regarding the CRRS. It remains to be confirmed whether the CRRS will contain helpful reports/information for the Member States when the EES enters into operation. <p>Slovenia</p> <ul style="list-style-type: none"> • Slovenia participates in eu-LISA's Biometric Working Group. <p>Sweden</p> <ul style="list-style-type: none"> • Sweden, together with other MS, participates in eu-LISA's Biometric Working Group and other appropriate fora (e.g. Europol's Information Management Forum, IO AG etc.). Sweden also proactively participates in implementing the User Software Kit (USK) tool for EES, VIS and ECRIS-TCN biometric processes. 				

1.6 Sub-action: Analysis of best practices devised within the scope of sub-actions 1.1-1.3 by Member State authorities	Timeline: 2021-onwards	Owners: eu-LISA, MS	Contributors: MS	Status: Ongoing
1.7 Sub-action: Sharing best practices identified in sub-actions 1.1-1.3 with the Member State authorities	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: Europol, Frontex	Status: Ongoing

Actions 1.6-1.7

eu-LISA

- On 2021 eu-LISA provided the EES User Software Kit (USK) to the Member States to ensure Data Quality at end user level during biometrics capturing. In addition, reports on biometric data quality will be provided as soon as the central repository for reporting and statistics (CRRS) is in production and connected to all eu-LISA core business systems. Moreover, in a number of meetings and pilots (Biometrics Working Group, eu-LISA Advisory Groups), eu-LISA explained to Member States how to capture biometric data, to use devices, and provided best practices and guidance to comply with the requirements of its core business systems.
- eu-LISA contributed to the ISO standardisation work as well as to the use of the NFIQ2⁸ standard libraries, as well as complied with ICAO / ISO standards. Best practices will come in the near future, when the implementation of the interoperability architecture will be in production.

Europol

- Europol does not acquire biometrics nor participate in border control, but is following the developments and best practices in MS with interest.

Czech Republic

- Czech Republic participates in eu-LISA's Biometric Working Group and other appropriate fora (e.g. eu-LISA Industry Roundtable, Europol's Information Management Forum, IO AG etc.). Czech Republic also proactively participates in implementing User Software Kit (USK) tool for EES, VIS and ECRIS-TCN biometric processes.

France

- After internal consultation, France will provide information on best practices to eu-LISA.
- In case any of the good practices cannot be implemented in a national context, France recommends to provide feedback and propose alternatives. In addition, France recommends to start a data quality review cycle as of 2023.

Sweden

- Sweden, together with other MS, participates in eu-LISA's Biometric Working Group and other appropriate fora (e.g. Europol's Information Management Forum, IO AG etc.). Sweden also proactively participates in implementing the User Software Kit (USK) tool for EES, VIS and ECRIS-TCN biometric processes.

⁸ Quality standard from the US National Institute for Standards and Technology (NIST) for fingerprint image quality

1.8 Sub-action: Elaboration and carrying out of training activities for the end users of biometric equipment for enrolment, identification and verification	Timeline: 2022- Onwards	Owners: eu-LISA, Frontex	Contributors: MS	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> Data Quality has been tackled specifically in the "shared Biometric Management Service (sBMS) and Biometric Data Quality" online training published by eu-LISA at the eu-LISA Learning platform in December 2022. Training on biometrics is developed and implemented as part of the training for all eu-LISA core business systems (e.g., training activities on the Automated Fingerprint Identification System (AFIS) are part of the Schengen Information System (SIS) training). <p>Frontex</p> <ul style="list-style-type: none"> Frontex developed an EES training course for national multipliers from MS/SAC regularly implemented in MS and/or online. Many sessions have been organised since 2021. In 2023, Frontex developed the EES training course for selected Standing Corps Cat. 1 officers in Italy. The course was concluded by a study visit to Genoa Sea BCP with live demonstration of equipment to be used in future for the EES. Frontex shared with eu-LISA the EES training module to ensure a wide distribution. <p>Czech Republic</p> <ul style="list-style-type: none"> This is part of regular training activities for corresponding EU systems and processes. <p>Romania</p> <ul style="list-style-type: none"> The Romanian experts from the competent authorities in the Ministry of Home Affairs has participated in meetings aimed at the interoperability of IT systems and improving the quality of biometric and alphanumeric data (eu-LISA Interoperability Advisory Groups; IO Workshops on testing; Interoperability Essentials online course; Technical Components of Interoperability, etc.) <p>The last technical webinars were held on 12.05.2023: Central Identity Repository (CIR), Multiple Identity Detector (MID), Central System Simulator and European Search Portal (ESP). All these courses concerned aspects of testing and interconnection with the central system, and a simulation made for the ESP, CIR-MID IT systems.</p>				

1.9 Sub-action: Monitoring the effects of adoption of best practices on the quality of biometric data introduced in the systems using readily available assessment methods	Timeline: 2023- Onwards	Owners: eu-LISA, Frontex	Contributors: MS	Status: Not yet started
This action will start once the sBMS enters into operation				

1.10 Sub-action: Campaigns for updating obsolete equipment for biometric data acquisition at MS level	Timeline: Q4 2021 – Q2 2022	Owners: eu-LISA, Frontex	Contributors: EC DG HOME, MS	Status: Implemented
<p>eu-LISA</p> <p><u>Actions</u></p> <ul style="list-style-type: none"> • Provision of test environments per core business system where Member States can test the performance of their business processes, with their respective National Systems and ICT solutions (equipment). • Provision of USK (User Software Kit) and presentations in the Biometrics Working Group and the Advisory Groups. • Provision of biometric quality functionalities in the associated core business systems. • Provision of biometric accuracy process as per Interoperability regulation. • Initial concept for the future setting up of a Testing Lab (please see actions 2-8-2.8) to allow Member States to test equipment in relation to its compliance to legal requirements and in relation to the support of the associated business processes per core business system. A feasibility study will be launched in 2023 in order to further define the scope and options for implementation. <p><u>Details</u></p> <ul style="list-style-type: none"> • The responsibility to comply with the legal requirements lies with the Member States. eu-LISA will further support the Member States when a Testing Lab will be in place. Until then, Frontex is expected to support the Member States, taking into account the associated eu-LISA core business systems requirements. • eu-LISA, via its Governance bodies (Advisory Groups, Programme Management Board and Biometric Working Group) ensures constant information and monitoring campaigns with its stakeholders. As per applicable regulations, it is the Member States responsibility to ensure that comprehensive testing is performed at their level. This includes testing of the devices to prove that they are compliant with the legal requirements. The Agency is supporting the Member States by providing environments where they can connect devices via their respective National System and tools which can support this exercise. The USK tool for biometrics is provided and pilots are executed to ensure that the associated requirements are respected. eu-LISA will provide testing environments with central systems connected; thus, Member States can connect and, via their National Systems, test their devices continuously. To avoid any competitive advantage and promotion of specific industry devices, the Agency recommends reference to the requirements mentioned in the legal base only. Thus, any device referenced to the catalogue will be placed there only in relation to specific requirements. In parallel, in the future, the activities of the Testing Lab will allow creating test environments where Member States / Union Agencies can test devices and business processes with simulations of the central systems. <p>EC DG HOME</p> <ul style="list-style-type: none"> • The Commission launched a call for expression of interest under the Specific Action “Support for the establishment of shared technical copies of the Schengen information System (SIS) by Member States and biometrics” under the Instrument for Financial Support for Border Management and Visa Policy (BMVI). The Specific Action 1.5.7 has an envisaged budget of EUR 5.5 million. It comprises three lots. 				

Lot 1.5.7.3 “SIS modernisation of equipment for the capturing of biometrics” aims at supporting Member States to modernise their biometric data capturing equipment used primarily to capture biometric data for inclusion in the SIS. In particular, the purpose of lot 1.5.7.3 is for Member States with an urgent need to modernize the equipment for biometric data gathering, in order to increase the number of biometric data introduced in SIS and to enhance their quality in line with the provisions of the SIS Regulations and the specific implementing acts.

Therefore, in order to apply for it, Member States must demonstrate an urgent need for modernisation in order to meet the quality requirements of SIS. The action was launched on 11 May 2022. The deadline for submission of proposals was 1 November 2022. Expenditure for the Specific Action was eligible as of 1 May 2023.

- [The process for awarding the funding of this Specific Action has finalised. MS who submitted successful proposals have been notified.](#)

Czech Republic

- Czech Republic acquires new biometric devices continuously. New generation of mobile and stationary Livescans will be acquired within a new framework contract for national automated biometric identification system (ABIS) system.

France

- The new procurement for biometric sensors incorporates international quality standards.
- With the help of the quality standards, the competent authorities of the Member States will be able to check the conformity of the equipment with the requirements of the European standards.

1.11 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Define the technical requirements for the standardised transliteration schemes and automated solutions for transliteration	2023	eu-LISA	EC DG HOME, MS, Europol	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> • eu-LISA drafted a document describing the cross-system transliteration/transformation rules to be applied on its core business systems. • In addition, there is an ongoing work to develop a Business Search Engine (part of interoperability), a shared component that will provide search capabilities to the Core Business Systems managed by eu-LISA. These search capabilities will include exact and inexact search capabilities (fuzzy, partial, wildcards etc.), as well as transliteration rules according to ICAO 9303 standard and phonetisation according to phonetic extraction algorithm Metaphone 3. These capabilities in the Business Search Engine will enable a cross-system search when the Core Business Systems interoperate. <p>Europol</p> <ul style="list-style-type: none"> • Europol will align its implementation of JHA large scale IT systems accordingly when the documentation is made available by eu-LISA. <p>Slovenia</p> <ul style="list-style-type: none"> • Slovenia is preparing a new search tool for the national databases. In the development process, eu-LISA’s guidelines regarding transliteration/transcription 				

is being taken into account.

Sweden

- Sweden, when feasible, will align its implementation of JHA large scale IT systems accordingly when the documentation is made available by eu-LISA

1.12 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Conduct assessment of training needs in the area of biographic/alphanumeric data input; develop and conduct regular training activities for MS authorities	2022-2023	eu-LISA	Europol, Frontex, CEPOL, EC DG HOME	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none">• The 2022 eu-LISA Training Needs Analysis, launched in August 2022, highlighted the need for additional training on biometric/alphanumeric data input, especially in relation to the Interoperability architecture. At the time the online course "shared Biometric Matching Service (sBMS) and Biometric Data Quality" had not been yet released, which covers a vast part of the training needs expressed. Data quality aspects are part of various training activities in all Core Business Systems (CBS).• The 2023 eu-LISA Training Needs Analysis will be initiated in mid-August 2023 and will provide additional information on whether the training needs are covered or more specific training activities should be prepared. <p>Europol</p> <ul style="list-style-type: none">• Europol is contributing to the training courses organised by CEPOL and eu-LISA by delivering training in line with its mandate. <p>Frontex</p> <ul style="list-style-type: none">• Dedicated discussions also took place with Frontex. <p>CEPOL</p> <ul style="list-style-type: none">• CEPOL published an Operational Training Needs Analysis on Law enforcement cooperation, information exchange and Interoperability in 2021, identifying training needs of law enforcement including the proficiency level of training needed and the profile of participants for the period of 2022-2024.• Training needs of law enforcement on biographic/alphanumeric data input shall be assessed in future training needs analyses conducted by CEPOL.• In 2022 CEPOL published the EU Strategic Training Needs Assessment (EU-STNA) 2022-2025 that defines the EU-level training priorities for law enforcement for the current EMPACT Cycle. Law enforcement cooperation, information exchange and Interoperability is one of the core capability gaps to be addressed in all training provided for law enforcement. The mid-term review of the EU-STNA takes place in 2023 including the emerging training needs since the publication of the Report.				

1.13 Sub-action:	Timeline:	Owners:	Contributors:	Status:
<p>Elaborate and propose requirements to ensure that the future development of the UMF meets the requirements of the new systems (i.e. EES, ETIAS, ECRIS-TCN) and the Interoperability purposes</p> <p>eu-LISA</p> <ul style="list-style-type: none"> Requirements stemming from the interoperability components and core business systems managed by eu-LISA have been shared with the owner of the Universal Message Format (UMF) standard. UMF v 3.1 was released to include most of the proposed changes. According to the agreement between eu-LISA, DG HOME and the UMF project lead, the implementation of UMF is a continuous process and will require further activities to achieve the alignment of UMF and the new systems. <p>EC DG HOME</p> <ul style="list-style-type: none"> This action (UMF) is being addressed in comitology (Commission implementing acts). The Commission Implementing Act on UMF has been adopted in February 2023. <p>Czech Republic</p> <ul style="list-style-type: none"> Czech Republic (as other Member States) participates in the IO (interoperability) Committee, where the Implementing Act on Universal Message Format (UMF) standard is created. <p>Sweden</p> <ul style="list-style-type: none"> Sweden (as other Member States) participates in the IO (interoperability) Committee, where the Implementing Act on Universal Message Format (UMF) standard is created. Sweden, was also an active project member of UMF3+ project. 	2021-2022	eu-LISA, EC DG HOME	Europol, Frontex, MS	Completed

2.2. THEMATIC AREA 2: Creation of a reference catalogue of devices and solutions for the acquisition of data and access to information in the central systems (SIS, VIS, ETIAS, ECRIS-TCN, EURODAC)

Objective 1: To establish a well-structured and coordinated approach for the development of a reference catalogue of devices and solutions for the acquisition of data and access to information.

Objective 2: To enable testing of devices and solutions in real-life environments and business processes.

2.1 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Consolidation and analysis of available studies, surveys and reports	2023	eu-LISA	Europol, Frontex, MS	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> eu-LISA started the assessment of building a repository of relevant studies and reports on standardisation on the Agency's Intranet, to be finalised in Q4 2023, with an aim to integrate it in the new Knowledge Management tool that is being developed at the Agency (Q2 2023), which will allow its consultation by Member States, European Commission and relevant agencies. <p>Europol</p> <ul style="list-style-type: none"> Europol will contribute to the exercise when requested so by eu-LISA. <p>Comment from France</p> <ul style="list-style-type: none"> FR will consult internally to identify and provide any relevant studies carried out. 				

2.2 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Making the eu-LISA central repository for the requirements management process (requirements documents, analysing, tracking, monitoring and comparison) available to relevant stakeholders	Continuous	eu-LISA		Ongoing
eu-LISA				

- In September 2021, eu-LISA finalised its requirements management process, which is now in use.
- To ensure efficient and consistent requirements and demand management, the Agency launched a project aiming at defining a process for Business Analysis (BAA) and to implement a tool to manage the service development lifecycle. [The BAA was completed and is in use, while the development of the tool has finished the first phase of the project and is currently in its second phase.](#)
- eu-LISA envisages making some of the requirements available to the authorised stakeholders (e.g. Business Requirements, Stakeholder Requirements or solution requirements Functional / Non-functional / transition per core business system). As soon as the associated tools will be available, the relevant extraction could be envisaged and requirements documentation can be provided to authorised teams in the MS and EU Agencies.

2.3 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Performance of supplementary studies	Continuous	eu-LISA	Frontex, EC DG HOME, EC DG JRC, MS	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> • eu-LISA, in line with its mandate and responsibilities is implementing all requirements stemming from the applicable legislation and associated Legislative Financial Statement (LFS). Stakeholders (Member States, European Commission, Agencies) may submit additional requirements. In that case, the Agency follows its Demand Management Process approved by eu-LISA Management Board in October 2021. Under this process, all associated impacts of the potential implementation of the additional requirements are assessed (legal aspects, resources at financial / human levels, planning etc.) to approve or not the new demand. • eu-LISA, with the support of the European Commission, monitors on a regular basis all changes to the primary and secondary legislation. and follows the associated internal processes (Business, Demand and requirement management). • eu-LISA organises regular Industry Roundtables, aiming to present state of the art technologies and the future trends to the Member States. The Agency is also supporting all involved stakeholders (Member States, EU Institutions, European Union Agencies) in the relevant fora, where the discussions are taking place. • eu-LISA also took part in the workshops of the study led by Frontex “Technology Foresight on Biometrics for the Future of Travel”. <p>Frontex</p> <ul style="list-style-type: none"> • Frontex led the generation of the study “Technology Foresight on Biometrics for the Future of Travel”. <p>DG JRC</p> <ul style="list-style-type: none"> • DG JRC is conducting four related studies: <ul style="list-style-type: none"> ◦ Quality of fingerprints of elderly citizens (above 65) - Enrolment of the data subjects targeted group initially scheduled from 3rd of November 2022 following DPO approval has been postponed to third quarter of 2023 pending new recruitments. ◦ Development of a Face quality metric algorithm (FaceQnet); a first prototype was submitted to the NIST. 				

- Development of a finger-mark quality metric algorithm (AFQA) - report on complementing AFQA using dactyloscopic expert opinions has been issued at the end of 2022. This quality metric algorithm is the basis for the ad-hoc working group by ISO to develop a related standard (see action 1.1)
- Evaluation of the performance of the matching system and the quality of data (facial recognition and fingerprints) of the EES together with eu-LISA. The evaluation protocols for fingerprint and face have been complemented with additional quality metrics. This action still needs to be implemented.

France

- France will consult internally to identify the testing initiatives carried out or planned.

2.4 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Collection of data on equipment or devices that are already either in use, have been tested, or otherwise proven to be fit for purpose by the EU Agencies or MS	2021 - Onwards	eu-LISA, Frontex	EUAA, EC DG HOME, EC DG JRC, MS	Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> ● Preparatory work has started, taking into account the Frontex Entry/Exit System Border Pilot study and other Member States pilot studies, as presented at EES/ETIAS Advisory Group. eu-LISA is preparing surveys aiming at collecting information on the devices in operation, tested and certified as fit for purpose, by the Member State Authorities or JHA Agencies, such as Frontex and Europol. <p>EUAA</p> <ul style="list-style-type: none"> ● EUAA participates as an observer at the moment. <p>Frontex</p> <ul style="list-style-type: none"> ● In Q2 2021 Frontex developed a platform for Member States experts to exchange information on EES procedures and equipment. It includes a list of equipment and knowledge on specific questions related to the use of EES equipment, including for the collection of biometric data. For access contact: Fx.support.EES@frontex.europa.eu <p>France</p> <ul style="list-style-type: none"> ● France will consult internally and send relevant information to eu-LISA. ● National JHA, border, visa and immigration authorities will need to exchange knowledge on different types of devices (e.g. for the capture and analysis of Facial Images and Fingerprints), aiming at collecting the business and operational requirements, as well as analyse the legal perspective. 				

2.5 Sub-action: Development of technical standards for the equipment used by MS authorities in context of border checks, and in particular within the scope of the EES and ETIAS	Timeline: 2024	Owners: Frontex	Contributors: eu-LISA, EC DG HOME, MS	Status: Ongoing
<p>Frontex</p> <ul style="list-style-type: none"> In September 2021 Frontex released a Technical Guide for Border Checks on Entry/Exit System (EES) related equipment. Frontex plans to develop Technical Standards for border checks equipment integrating EES equipment as part of the second iteration of development of Technical Standards. <p>eu-LISA</p> <ul style="list-style-type: none"> eu-LISA developed biometric quality algorithms for fingerprints and face images. These algorithms are aligned with the relevant EU and ISO standards, as well as with the EU regulation for EES and the EES Handbook. Following their integration into products (the EES User Software Kit -USK), they were tested in operational contexts, in Q2-Q3 of 2022. Based on the testing of the algorithms in close-to-operational conditions and analysis of the outputs, eu-LISA has developed further improvements and created new versions of the algorithms. This practice will continue once the sBMS (shared Biometric Matching Service) enters into operation. 				

2.6 Sub-action: Conduct a feasibility study to support the creation of the Testing Lab	Timeline: Q3 2023 – Q2 2024	Owners: eu-LISA	Contributors: Frontex, Europol, EC DG JRC	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> eu-LISA started internal discussions on the setting up of a Testing Lab, including its scope and objectives. A concept paper was discussed at the Management Board in November 2022. While the priority of the Agency remains the entry into operation of the new CBS, the MB expressed support towards the establishment of the testing lab but requested more detailed information through a feasibility study. eu-LISA has started the preparation for the study on the feasibility study. The contract is expected to be signed in Q4 2023. The feasibility study is expected to be delivered and presented to the eu-LISA MB in Q2 2024. 				

2.7 Sub-action: Set up an Expert Group on the Testing Lab	Timeline: 2024	Owners: eu-LISA	Contributors: Frontex, Europol, MS	Status: Not yet started
eu-LISA <ul style="list-style-type: none"> It is programmed to set up the expert group after the results of the feasibility study are provided (see Action 2.6). 				

2.8 Sub-action: Establishment of the Testing Lab	Timeline: 2025	Owners: eu-LISA, Frontex, Europol	Contributors: EC DG HOME, EC DG JRC	Status: Not yet started
eu-LISA <ul style="list-style-type: none"> Based on the feasibility study conducted in Q4 2023 (see action 2.6), eu-LISA will present the establishment of the testing lab for approval by its Management Board in 2024. 				

2.9 Sub-action: Development of standardised Business Process Validation use cases (for EES/ETIAS)	Timeline: Continuous	Owners: eu-LISA	Contributors: Frontex, EC DG HOME, MS	Status: Ongoing
eu-LISA <ul style="list-style-type: none"> In 2021 eu-LISA provided the EES business processes to the MS (as well as in the Frontiers Working Party). The MS are in charge of implementing these processes at national level, testing them and training their end-users accordingly. Before every AG meeting (also applicable for Interoperability and other AGs), MS are requested to provide their input concerning the progress in this matter via a questionnaire. eu-LISA discusses the questionnaire outcomes on monthly basis with the CBS Governance. Hence, the MB took decisions requesting the MS to advance their associated preparations in this matter. For more details, please see action 1.4 eu-LISA, Frontex and CEPOL are closely collaborating to provide training activities to Member States, on the new systems. CEPOL reports on this point under action 1.12 				

2.10 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Creation of new and re-engineering of existing business processes	2021-2022	MS	eu-LISA, Frontex, Europol, EC DG HOME, MS	Completed
<p>Czech Republic</p> <ul style="list-style-type: none"> Czech Republic uses the opportunity of rebuilding national systems due to SIS Recast, EES, ETIAS and IO to re-design national processes and to implement them into various national workflow systems (border application, SIRENE application etc.) <p>Sweden</p> <ul style="list-style-type: none"> Sweden, whenever suitable and feasible, works with re-designing of existing workflows or business processes. <p>Romania</p> <ul style="list-style-type: none"> The National SIS Centre has updated N.SIS to the Recast version and will continue to update it according to the technical specifications provided by eu-LISA. <p>eu-LISA</p> <ul style="list-style-type: none"> As mentioned in action 1.4 above, eu-LISA is providing full support to the Member States in the creation of new and the re-designing of the existing workflows or business processes. In this respect, the associated environments, per core business system (CBS), are/will be provided, to allow the Member States test these processes end to end, with their respective National Systems and their end users. This will be the opportunity for the Member States and EU Agencies to also train their end users, including testing in real time against the central systems. eu-LISA continues to monitor the activities on the state of play of Member States regarding the re-engineering of processes by means of a regular questionnaire. Member States are requested to report on their preparation. This has been done via the associated Advisory Groups and in line with the relevant Management Board decisions. Additionally, the regular Industry roundtable events regularly organised by eu-LISA focus on the use of automated equipment at the border and biometrics providing Member States with information on the state-of-the-art technologies. In addition, eu-LISA provided the continuous testing / test-driven development (CT TDD) and will also provide the provisional system acceptance test (PSAT TDD). Member States and EU Agencies will have the opportunity to collect test cases from these TDDs, design their own process test cases and thus test the performance of their processes before the associated entry into operation of the new systems. <p>Europol</p> <ul style="list-style-type: none"> Europol is developing new and changing existing business processes to implement the changes stemming from the Regulations of various JHA large scale IT systems, especially in relation to ETIAS and SIS. 				

2.11 Sub-action: Regular monitoring of the progress made in developing new and re-engineering of the existing business processes at Member State level	Timeline: 2021-2022	Owners: eu-LISA	Contributors: Europol, MS	Status: Completed
<p>eu-LISA</p> <ul style="list-style-type: none"> • Please see action 1.4 above. • On a monthly basis, Member States are requested to provide information concerning the progress made in developing new processes and re-engineering of the existing business processes for the preparation for the entry into operations of EES and ETIAS. • eu-LISA collects the information from the Member States through a questionnaire, and also reports the feedback provided by Member States during the EES and ETIAS Advisory Groups. • Member States are fully aware by when these processes have to be in place and tested, as the associated milestones are communicated. <p>Europol</p> <ul style="list-style-type: none"> • Europol also submits monthly reports to eu-LISA in the context of the same exercise. <p>France</p> <ul style="list-style-type: none"> • France will consult internally and send relevant information to eu-LISA. <p>Sweden</p> <ul style="list-style-type: none"> • Sweden, through a questionnaire, provides eu-LISA with the information concerning the progress made in developing new processes and re-engineering of the existing business processes, and also reports the information during the EES and ETIAS Advisory Groups. 				

2.12 Sub-action: Monitor and analyse updates stemming from future legal basis and standards	Timeline: Continuous	Owners: eu-LISA	Contributors: EC DG HOME	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> • eu-LISA monitors the changes in the legal base on a regular basis. The Agency has established an internal “Legal Observer” - a centralised database, where all primary and secondary legislative acts are kept up-to-date. • eu-LISA participates in the Committees and Expert Groups where new legal texts are discussed, analyses the proposals and provides feedback within the remit of its mandate. The agency also collaborated with the Commission and the Member States since 2021, in the review and development of the EES, ETIAS and Interoperability Handbooks. 				

2.3. THEMATIC AREA 3: Strengthening cyber security

Objective 1: Safeguarding the integrity, security and resilience of infrastructures, networks and services participating in the EU large-scale IT systems in the JHA area (SIS, VIS, EES, ETIAS, ECRIS-TCN, Eurodac and the interoperability components).

Objective 2: Strengthening the ability to prevent, discourage, deter and respond to malicious cyber activities that may affect the operation of the EU large-scale IT systems (SIS, VIS, EES, ETIAS, ECRIS-TCN, Eurodac and the interoperability components).

Objective 3: Strategic, operational and technical cooperation between European and national level for the operation of the EU large-scale IT systems (SIS, VIS, EES, ETIAS, ECRIS-TCN, Eurodac and the interoperability components).

3.1 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Improve service protection applying cybersecurity protective measures on internet facing services	2022	eu-LISA	CERT-EU, ENISA, EC DG HOME	Implemented
<p>eu-LISA</p> <ul style="list-style-type: none"> The security requirements were included by eu-LISA in the web services currently implemented for EES and ETIAS. The Risk assessment and Security plan of the Agency include the measures and controls linked to this project. <p>CERT-EU</p> <ul style="list-style-type: none"> CERT-EU put in place a service that continuously scans the internet facing services of constituents EU Institutions, Agencies and Bodies (EUIBAs). The findings are uploaded to CERT-EU portal where constituents EUIBAs can see the results and take actions. In addition, CERT-EU offers a new service since this year called Detectify. It is a European based SaaS that provides services such as continuous monitoring of domains and detection of vulnerabilities, exposed files, and misconfigurations on internet-facing services. <p>ENISA</p> <ul style="list-style-type: none"> A recurring cyber exercise with eu-LISA and its stakeholders was conducted at the end of October 2022. Findings and lessons learned are available to eu-LISA. 				

3.2 Sub-action: Enhance security monitoring mechanisms and threat hunting on internet facing services	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, ENISA	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> The activity has been integrated to the creation of a Security Operation Centre (SOC) in eu-LISA to manage response to cyber security incidents for the large-scale IT systems operated by the Agency. A SIEM capability is in place and there is a roadmap for all the systems to be integrated with it to enhance the threat detection, threat management, collection of logs, analysis and correlation of logs in real time and detection of potential indicators of a data breach. <p>CERT-EU</p> <ul style="list-style-type: none"> CERT-EU is launching a new service that will be released in the upcoming service catalogue that may be helpful in addition of existing services described above <p>ENISA</p> <ul style="list-style-type: none"> A recurring cyber exercise with eu-LISA and its stakeholders was conducted at the end of October 2022 to facilitate security monitoring. Also, ENISA has published guidelines on how to set up Security Operation Centre SOC. 				

3.3 Sub-action: Develop a common identity and access provisioning schema leveraging an interoperable authentication and authorization protocol. This schema will provide for identity federation accommodating flexible authentication and authorisation decisions while preserving security on the tokens and claims.	Timeline: Continuous	Owners: eu-LISA	Contributors: ENISA, EC DG HOME, MS	Status: Ongoing
<p>eu-LISA</p> <ul style="list-style-type: none"> A Business Case has been prepared by eu-LISA to present the Identity and Access Management scope that will enable a common identity and access provisioning schema leveraging an interoperable authentication and authorisation protocol for identity federation. <p>ENISA</p> <ul style="list-style-type: none"> ENISA's contribution is available via its publications on privacy enhanced technologies. 				

3.4 Sub-action: Develop stronger cooperation between eu-LISA, MS and JHA agencies on security management practices covering end-to-end security and business continuity of the large-scale IT systems achieved through periodic meetings of the Security Officers Network	Timeline: Continuous	Owners: eu-LISA	Contributors: ENISA, CERT-EU, Frontex, EUAA, EC DG HOME	Status: Ongoing
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eu-LISA

- The Security Officers Network of the JHA Agencies (JHA SON) had meetings twice a year since November 2021, where different points related to the security of the large-scale IT systems have been discussed. Particular attention was paid to cooperation in case of security incidents in the context of interoperability. The creation of the Cooperation Group and of the JHA SON in 2021 has enhanced the sharing of security best practices. In addition, eu-LISA has actively participated in the CERT-EU cooperation arrangement with other EU institutions and agencies.
- [In June 2023 eu-LISA organised their Industry Roundtable focused on cybersecurity: “Looking Ahead - Ensuring Cyber-resilience of EU IT Systems against Emerging Threats”](#). The eu-LISA Industry Roundtable aims to bring together representatives of the industry, Member States’ authorities and EU institutions; providing a forum for eu-LISA stakeholders to exchange views on developments of different technologies.

ENISA

- A recurring cyber exercise with eu-LISA and its stakeholders was conducted at the end of October 2022. Findings and lessons learned are available to eu-LISA.

3.5 Sub-action: Promote the use of the IT Security Risk Management Methodology (ITSRM2) following the guidelines set under the ETIAS Implementing Act and the model security and business continuity plans	Timeline: 2022-2023	Owners: eu-LISA	Contributors: MS, Frontex, EC DG HOME	Status: Implemented
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eu-LISA

- In the preparation of the new security plans for the large-scale IT systems, eu-LISA has used the ITSRM methodology and has presented it during the JHA Security Officers Network (SON) meetings. An approved standard on the ITSRM methodology is also available for the security community.

France

- France participates in the work of ENISA in the context of IT Security Risk Management Methodology (ITSRM2).

3.6 Sub-action: Prioritise the setup of the Cooperation Group in line with the Implementing Act on security incident response under the interoperability framework	Timeline: 2022	Owners: eu-LISA, MS	Contributors: ENISA, CERT-EU, EC DG HOME	Status: Implemented
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eu-LISA

- The Cooperation Group was set up, its leader was designated, and processes were drafted. Work for set-up the cooperation procedure and Cooperation Platform has started. The Cooperation Group was set up to ensure cooperation between Member States, ETIAS Central Unit, Europol and eu-LISA in the event of security incidents, as required by Commission Implementing Decision 2021 (6663) and Commission Implementing Decision 2021 (6664). See also actions 3.24 - 3.27.

Czech Republic

- Czech Republic participates in the Cooperation Group and implements its outcomes into the national interoperability (IO) architecture.

France

- France participates in the Cooperation Group.

3.7 Sub-action: Revise the applicable security control frameworks to encompass additional controls addressing AI, including machine learning, threat landscape and security of modern cloud technologies	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: ENISA, CERT-EU, EC DG HOME	Status: Ongoing
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eu-LISA

- [eu-LISA has revised the ITSRM control catalogue to include additional controls addressing the Artificial Intelligence and Machine Learning domain. This version is pending to be adopted by the management.](#)

Czech Republic

- Czech Republic is gathering necessary inputs related to Artificial Intelligence from various fora and working groups (eu-LISA's Working Group on Artificial Intelligence, Europol's Working Group on Information Management, ENLETS etc.)

Sweden

- [Sweden is both participating in and gathering necessary inputs related to Artificial Intelligence from various fora and working groups \(eu-LISA's Working Group on Artificial Intelligence, Europol's Working Group on Information Management, Europol's Innovation Lab, ENLETS etc.\)](#)

3.8 Sub-action: Develop a risk-based cybersecurity architecture framework driven by the business objectives on security.	Timeline: 2022-2023	Owners: eu-LISA	Contributors: ENISA, EC DG HOME	Status: Implemented
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eu-LISA

- eu-LISA has developed the security architecture artefacts from the SABSA framework (Sherwood Applied Business Security Architecture Framework).

3.9 Sub-action: Develop good practices on continuous security testing, offensive security and assurance activities to be integrated into the entire lifecycle of System Development and Operation	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, MS	Status: Ongoing
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eu-LISA

- A first draft of the good practices has been prepared by eu-LISA and work is ongoing for its finalisation.

CERT-EU

- CERT-EU has Offensive Security services as part of the SLA with EU-LISA.

3.10 Sub-action: Review the mission, charter, objectives, and responsibilities of the SOC entity and determine the SOC Processes and the necessary service functions to support them.	Timeline: 2022	Owners: eu-LISA	Contributors: ENISA, CERT-EU, Europol	Status: Implemented
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eu-LISA

- A computer security incident response team (CSIRT) Maturity Improvement project is currently running until 2023, designed to assess and improve the maturity of the eu-LISA CSIRT organisation to the Intermediate maturity level of the ENISA CSIRT Maturity Framework and to achieve accreditation under the TF-Introducer Scheme, with the sponsorship of CERT-EU and CERT-EE.
This action has been completed in the context of CSIRT Maturity project.

3.11 Sub-action: Identify the SOC structures, building blocks and roles needed to support the SOC organisation	Timeline: 2022	Owners: eu-LISA	Contributors: CERT-EU, Europol, EC DG HOME	Status: Implemented
eu-LISA <ul style="list-style-type: none"> Please see action 3.10. This action has been completed in the context of CSIRT Maturity project. 				

3.12 Sub-action: Identify the event sources categories and map them in the relevant Event Management process while understanding the environment and improving the relevant business use cases	Timeline: 2022	Owners: eu-LISA	Contributors: ENISA, CERT-EU, Europol	Status: Implemented
eu-LISA <ul style="list-style-type: none"> A data model process has been implemented in the security information and event management (SIEM). Data sources are mapped to a specific data model and correlation searches are built based on the that model, to implement specific detection use cases. 				

3.13 Sub-action: Adopt a process driven evaluation model based on pre-mortem analysis	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, ENISA, EC DG HOME	Status: Implemented
eu-LISA <ul style="list-style-type: none"> A computer security incident response team (CSIRT) Maturity Improvement project is currently running until 2023, designed to assess and improve the maturity of the eu-LISA CSIRT organisation to the Intermediate maturity level of the ENISA CSIRT Maturity Framework and to achieve accreditation under the TF-Introducer Scheme, with the sponsorship of CERT-EU and CERT-EE. This action will be completed in the context of this project. Please see action 3.10. This action has been completed in the context of CSIRT Maturity project. 				
CERT-EU <ul style="list-style-type: none"> CERT-EU has confirmed its sponsorship to eu-LISA. 				

3.14 Sub-action: Establish SOC discrete technical functions while seeking Service Level Agreement based synergies with competent EU bodies	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, ENISA	Status: Implemented
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eu-LISA

- A service level agreement (SLA) with CERT-EU has been implemented since 18/12/2018, including managed security monitoring and intrusion detection services. A CSIRT Maturity Improvement project is currently running until 2023 (see action 3.13). This action has been completed in the context of this project.

3.15 Sub-action: Incorporate AI and machine learning technologies to improve the SOC capability	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, ENISA	Status: Implemented
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eu-LISA

- 2022. An internal proof of concept (PoC) has been implemented by eu-LISA to evaluate the use of the Splunk Machine Learning Toolkit to extend the search and detection capabilities of Splunk using machine learning (ML) algorithms.
- 2023. eu-LISA has integrated the Splunk Machine Learning Toolkit to extend the search and detection capabilities of Splunk using machine learning (ML) algorithms.

CERT-EU

- CERT-EU has conducted an introductory study for Splunk platform Machine Learning Toolkit in 2021.
- CERT-EU released a paper “Potential impact and risks of Generative AI in EUIBAs” in May 2023: https://www.cert.europa.eu/static/security-guidance/TLP-CLEAR-CERT-EU_Security_Guidance-23-002_v1.2.pdf

3.16 Sub-action: Develop threat intelligence capability on actionable information sources	Timeline: 2022-2023	Owners: eu-LISA	Contributors: CERT-EU, ENISA, Europol	Status: Implemented
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eu-LISA

- A computer security incident response team (CSIRT) Maturity Improvement project is currently running until 2023, designed to assess and improve the maturity of the eu-LISA CSIRT organisation to the Intermediate maturity level of the ENISA CSIRT Maturity Framework and to achieve accreditation under the TF-Introducer Scheme, with the sponsorship of CERT-EU and CERT-EE. This action will be completed in the context of this project.

- Please see action 3.10.
This action has been completed in the context of CSIRT Maturity project.
- eu-LISA has developed the capability to process and use the CTI provided by CERT-EU and open sources.

CERT-EU

- CERT-EU has developed a Threat Intel capacity and is sharing actionable information with eu-LISA.

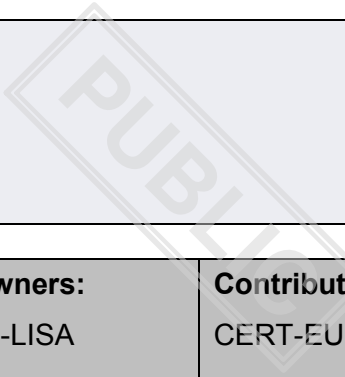
ENISA

- ENISA is interested in supporting and collaborating on this action by identifying areas of interest from its existing product catalogue.

<p>3.17 Sub-action:</p> <p>Collect event sources based on detection artefacts from internal Security Incident and Event Management (SIEM) solutions, endpoint protection platforms and Endpoint Detection and Response (EDR) technologies</p>	<p>Timeline:</p> <p>2022</p>	<p>Owners:</p> <p>eu-LISA</p>	<p>Contributors:</p> <p>CERT-EU</p>	<p>Status:</p> <p>Implemented</p>
<p>eu-LISA</p> <ul style="list-style-type: none"> • A data model process has been implemented in the SIEM. Data sources are mapped to a specific data model and correlation searches are built based on the that model, to implement specific detection use cases. <p>CERT-EU</p> <ul style="list-style-type: none"> • eu-LISA is using CERT-EU monitoring services. 				

<p>3.18 Sub-action:</p> <p>Identify patterns and capabilities to support root cause analysis of incidents and elimination of the threat while ensuring the risk of recurrence is properly handled.</p>	<p>Timeline:</p> <p>2022-2023</p>	<p>Owners:</p> <p>eu-LISA</p>	<p>Contributors:</p> <p>CERT-EU, ENISA, Europol</p>	<p>Status:</p> <p>Implemented</p>
<p>eu-LISA</p> <ul style="list-style-type: none"> • A computer security incident response team (CSIRT) Maturity Improvement project is currently running until 2023, designed to assess and improve the maturity of the eu-LISA CSIRT organisation to the Intermediate maturity level of the ENISA CSIRT Maturity Framework and to achieve accreditation under the TF-Introducer Scheme, with the sponsorship of CERT-EU and CERT-EE. This action will be completed in the context of this project. • Please see action 3.10. This action has been completed in the context of CSIRT Maturity project. 				

<p>CERT-EU</p> <ul style="list-style-type: none"> • See support provided to eu-LISA above. <p>ENISA</p> <ul style="list-style-type: none"> • ENISA actively supports this action by sharing known best practices.



3.19 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Improve Security Incident and Response Team (SIRT) capability from the greenfield to establishing level, focusing on improved near-real-time threat detection through the development of the necessary detection and response engineering functions	2022-2023	eu-LISA	CERT-EU, ENISA	Implemented
3.20 Sub-action:	Timeline:	Owners:	Contributors:	Status:
Prepare a continuous assessment plan for prevention and detection capabilities as a way to ensure SIRT objectives	2022-2023	eu-LISA	CERT-EU, ENISA	Implemented

<p>Actions 3.19-3.20</p> <p>eu-LISA</p> <ul style="list-style-type: none"> • A computer security incident response team (CSIRT) Maturity Improvement project is currently running until 2023, designed to assess and improve the maturity of the eu-LISA CSIRT organisation to the Intermediate maturity level of the ENISA CSIRT Maturity Framework and to achieve accreditation under the TF-Introducer Scheme, with the sponsorship of CERT-EU and CERT-EE. This action will be completed in the context of this project. • Please see action 3.10. This action has been completed in the context of CSIRT Maturity project. <p>CERT-EU</p> <ul style="list-style-type: none"> • See support provided to eu-LISA above. <p>ENISA</p> <ul style="list-style-type: none"> • ENISA actively supports this action by sharing known best practices.

3.21 Sub-action: Develop and sign a trilateral Memorandum of Understanding between eu-LISA, the European Commission and Member States to address a common collaborative approach on risk management covering strategic, operational and technical cooperation	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: EC DG HOME	Status: Ongoing
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eu-LISA

- In the context of interoperability, the JHA Security Officers Network (SON) will assess the preparation of recommendations for security and Business Continuity plans (similarly as done for EES and ETIAS) with the aim of promoting a common collaborative approach on risk management. Discussions to be launched (Security Officers Network of the JHA Agencies mandate was expected to be adopted by the JHA Agencies Directors on 29 November 2022. Following this, a dedicated meeting may be organised in 2023); issuing technical guidelines by eu-LISA to be considered.

Czech Republic

- Czech Republic is waiting for the outcomes/proposals from eu-LISA and European Commission.

3.22 Sub-action: Adopt a commonly acceptable set of cybersecurity processes among the stakeholders (Member States, JHA Agencies and the European Commission) on the way cybersecurity is setup and managed focusing on common monitoring, measurement and continuous improvement metrics and indicators.	Timeline: 2022-2023	Owners: eu-LISA	Contributors: MS, EC DG HOME	Status: Ongoing
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3.23 Sub-action: Adopt a common set of cybersecurity standards allowing for alignment among stakeholders while promoting common maturity and overall performance.	Timeline: 2022-2023	Owners: eu-LISA	Contributors: MS, EC DG HOME	Status: Ongoing
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Actions 3.22-3.23

eu-LISA

- The activity is linked to the adoption of the new Cyber Security Regulation for EU institutions, bodies and agencies, foreseen for adoption in 2022. The

Regulation is being discussed by the co-legislators. In preparation to this activity, a number of guidelines are under preparation by ENISA. These activities are ongoing.

3.24 Sub-action: Identification of the mission, scope, functionality and organisation of the Cooperation Platform	Timeline: 2022-2023	Owners: eu-LISA	Contributors: MS, EC DG HOME	Status: Implemented
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eu-LISA

- 2022. The Cooperation Group has completed the identification of the mission, scope, functionality and organisation of the Cooperation Platform. The Platform is under development.
- 2023. The platform will be partially delivered as a Minimum Viable Product with services provided by eu-LISA initially.

3.25 Sub-action: Identification of the supporting information channels including threat intelligence sources that will facilitate the situational awareness and shall be incorporated in the Cooperation Platform	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: CERT-EU, EC DG HOME	Status: Ongoing
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eu-LISA

- CERT-EU has made available the collaboration tools that support communication amongst constituents EU Institutions, Agencies and Bodies (EUIBAs) during incident response. CERT-EU has a secure chat platform and a platform to exchange files during incident response.

CERT-EU

- In addition, CERT-EU maintains a platform called Unified Portal to deliver documents and information about Threat Intelligence
- CERT-EU also opened a self-hosted platform called Agora to ease the sharing of files between EUIBAs

3.26 Sub-action: Introduction of collaboration tools and specialised security analysis tools that will support the communication among stakeholders and the root cause analysis of security incidents	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: ENISA, CERT-EU, Europol	Status: Ongoing
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3.27 Sub-action: Preparation of monitoring and reporting tools allowing the visualisation of the current status of the activities, threats and incidents analysed under the scope of the Cooperation Platform	Timeline: 2022-2023	Owners: eu-LISA, MS	Contributors: ENISA, CERT-EU, EC DG HOME	Status: Ongoing
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Actions 3.26-3.27

eu-LISA

- Following the creation of the Cooperation Group as per Commission Implementing Decisions C (2021) 6663 and C (2021) 6664, the members have initiated the discussion on the high-level design and functionalities for the Cooperation Platform, including on the possible implementation of a chat tool.

Czech Republic

- Czech Republic participates in the Cooperation Group and implements its outcomes into the national interoperability (IO) architecture.

3.28 Sub-action: Develop and sign a multilateral Memorandum of Understanding between eu-LISA, CEPOL, ENISA and CERT-EU to include cooperation on cybersecurity awareness and training targeting specific threats and response management applicable to the EU large-scale IT systems	Timeline: 2022-2023	Owners: eu-LISA, CEPOL	Contributors: CERT-EU, ENISA, Europol, EC DG HOME	Status: Ongoing
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eu-LISA

- In 2022 the JHA agencies have created the JHA Security Officers Network (SON) that foresees cooperation in this area. In parallel, the cyber security Regulation and Inter-Institutional Security Training and Awareness Group are equally covering these cooperation aspects on cyber security awareness and training.

CEPOL

- The annual joint working plan with eu-LISA addresses areas of training delivery covering topics of joint interest. The draft of the plan for 2023 is under signature.

CERT-EU

- CERT-EU is developing the User Awareness Program and has informed eu-LISA in June 2022.
- Awareness services from CERT-EU are delivered to eu-LISA as part of their SLA.
- CERT-EU is also organizing regular technical trainings with external providers.

ENISA

- A recurring cyber exercise with eu-LISA and its stakeholders was conducted at the end of October 2022. Findings and lessons learned are available to eu-LISA.

3.29 Sub-action:

Exchange of staff among agencies under MoU for a defined period (1-2 weeks) to facilitate the delivery of standardised cyber security awareness and training and enable exchange of best practices to develop mutual understanding of the security environment, business contexts and enable better cooperation

Timeline:

2022-2023

Owners:

eu-LISA,
CEPOL

Contributors:

CERT-EU, ENISA, Europol, EC
DG HOME

Status:

Ongoing

eu-LISA

- The initiative is under assessment by eu-LISA in the context of the update of existing Memoranda of Understanding and linked to the adoption of the new Information Security Regulation for EU institutions, bodies and agencies, foreseen for adoption in 2022. The Regulation is being discussed by the co-legislators.

CEPOL

- Subject to the MoU to be concluded, CEPOL may send staff to other agencies for 1 or 2 weeks in the form of mission with a staff development focus. Similarly, CEPOL may receive staff from other agencies for a defined period for the purpose of receiving an outside perspective of risks for CEPOL's ICT infrastructure stemming from cyber security.

Acronyms

ABIS	Automatic Biometric Identification System
AFIS	Automatic Fingerprint Identification System
AG	Advisory Group
AI	Artificial Intelligence
BCP	Border Crossing Points
CBS	Core Business Systems
CEPOL	EU Agency for Law Enforcement Training
CERT-EU	Computer Emergency Response Team for the EUIBAs
CIR	Common Identity Repository
CRRS	Central Repository for Reporting and Statistics
CSIRT	Computer Security Incident Response Team
DG HOME	Directorate General Migration and Home Affairs
DG JRC	Directorate General Joint Research Centre
DHS	Department of Homeland Security
DQ	Data Quality
EAB	European Association for Biometrics
EC	European Commission
e-CODEX	e-Justice Communication via Online Data Exchange System
ECRIS	European Criminal Record Information System
EES	Entry Exit System
EiO	Entry into Operation
ENISA	EU Agency for Cybersecurity
ENLETS	European Network of Law Enforcement Technology Services
ESP	European Search Portal
ETIAS	European Travel Information and Authorisation System
EU	European Union
EUIBAs	EU Institutions, Agencies and Bodies
eu-LISA	European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice
EURODAC	European Asylum Dactyloscopy Database
FRONTEX	European Border and Coast Guard Agency
ICAO	International Civil Aviation Organisation
IO	Interoperability
ISO	International Organisation for Standardisation
IT	Information Technologies
ITSRM	IT Security Risk Management

JHA	Justice and Home Affairs
JTC	Joint Technical Committee
MB	Management Board
MID	Multiple Identity Detector
ML	Machine Learning
MoU	Memorandum of Understanding
MS	Member States
NIST	National Institute for Standards and Technology
OBIM	Office of Biometric and Identity Management
sBMS	Shared Biometric Matching Service
SC	Sub Committee
SIEM	Security Information and Event Management
SIS	Schengen Information System
SLA	Service-Level Agreement
SON	Security Officers Network
TCN	Third Country National
ToR	Terms of Reference
UMF	Universal Message Format
USK	Users Software Kit
VIS	Visa Information System
WG	Working Group
WP	Working Party
WP IXIM	WP on JHA Information Exchange



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Final version

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