



PROJECT SIIP

Deliverable 9.4: **Field Testing and End-User Training Final Report**



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1 INTRODUCTION

The present document consists of deliverable D9.4 “Field Testing and End-User Training final report” of the Speaker Identification Integrated Project (SIIP). SIIP is a European Union funded research project, under the 7th Framework Program (FP7), aimed at developing law enforcement capabilities in the field of voice recognition and speaker identification, including the ability for law enforcement agencies (LEA) in one country to search databases of speakers in other countries via INTERPOL. Law enforcement agencies in INTERPOL member countries and INTERPOL itself represent the potential end-users of the SIIP outcome.

Deliverable D9.4 “Field Testing and End-User Training final report” is prepared within the scope of Work Package 9 “Validation, Field Testing and End Users training” efforts as detailed in **Box 1**¹. The report starts by presenting the objectives and structure of the event hosted by INTERPOL at its General Secretariat premises on 21-22 November 2017. Further on, it describes the event audience, presenting the participants’ background. The report contains a detailed outline of the event content, including the live demonstrations performed by two LEAs in their capacity as project partners, the enrichment presentations, the training session and adjacent discussions. Additionally, the deliverable expands on the dissemination efforts undertaken prior to, during and following the event, including the associated material. The report ends with some conclusions and final thoughts on the overall impression of the end-user community regarding the developed tool. For readers’ convenience, the annexes comprise the event agenda, template invitation letter circulated to the stakeholders, group photo as well as the updated version of the SIIP factsheet.

To contextualise the endeavours presented in the present deliverable, **Box 1** below reproduces from the SIIP Description of Work (DoW), the Work Package 9 objectives, the tasks of relevance to the report, and the expected deliverables.

Box 1. Extract from SIIP Description of Work: Work Package 9 “Validation, Field Testing and End Users training” (with minor edits)

Objectives

A. Validation

- to validate and quantify the real-world performance of the integrated SIIP solution, with a focus on quantifying improvements over current-generation voice identification technologies;
- to identify the factors that most directly influence performance in text-independent voice identification systems, such as input device, operational environment, subject composition;
- to provide the EC with information required to substantiate and justify the use of SIIP technologies in a range of environments central to the security domain.

B. Field Testing and End-Users training

- to run the field tests to test the integrated solution in real field environment and scenarios;
- to train SIIP end users so they will be able to operate SIIP system directly during the field tests;
- to train INETRPOL, PJ, MPS, BKA and RACIS investigation officers about SIIP/SISC portal & MMI operation, features and capabilities (so they will be able to operate the system directly during the field tests).

Description of work

T9.4 Field Test Plan will run, try and validate the SIIP eco-system (SIIP<-->SISC) in 3 theatres in parallel (PJ, RACIS and INTERPOL) in order to demo the SIIP eco-system capabilities. This will ensure that the developed solutions are feasible in a variety of LEA investigation environments. The primary objective of the field test tasks will be to allow the consortium to

¹ **Box 1** reproduces from the SIIP Description of Work, the WP9 objectives, the description of tasks of relevance to the present report, as well as the list of expected deliverables.

install, commission and conduct the various tests required to prove the effectiveness of the SIIP solution.

Therefore the Field Test Plan will have to take into account the following points to ensure its success:

- Provision of sufficient space to install the SIIP equipment, provision of power for the SIIP equipment, provision of Local Area Network (LAN) connectivity, hosting of any IT equipment (servers etc.) on campus that may be required, WAN connectivity required to access components of the SIIP solution;
- Provision of LEA staff to facilitate field tests (by prior arrangement);
- Co-ordination with any person and entity that are involved in the field tests;
- Scenarios content and scenario acting procedures and personnel;
- Preparation of scenarios simulated data;
- The way of describing and the scenario story to the audience;
- Event dissemination plan, event agenda, event guests/audience list , invitations , event documentary movie;
- Field test day logistics (catering, seats, accommodation etc.);
- Clear definition of the test strategy and test plans.

T9.5 Field Tests Execution

For the purpose of executing field tests for the SIIP solution the following sub-tasks will be carried out:

- INTERPOL will provide lab space where SISC will be installed; PJ will provide lab space where the SIIP (PJ) will be installed; RACIS will provide lab space where the SIIP (RACIS) will be installed.
- The consortium will act and simulate two field test scenarios:
 1. Scenario #1: Jeweller's robbery investigation
 2. Scenario #2: Terrorist attack investigation
- Perform two Field Test Demo day-events, one at INTERPOL and second at PJ. These two events will be a show of SIIP consortium where the system SID capabilities and international info sharing mechanism will be demonstrated (based in simulated data) to external guests (LEAs and policy makers from all Europe). Therefore, this event can be also considered as dissemination event.
- During the field test event day, the consortium will simulate each of these scenarios by acting them, step by step, and show to the guests the system capabilities and performance.
- The whole SIIP eco-system (SIIP-SISC) will be activated and demonstrated including:
 - o SIIP/SISC portal (which will be operated directly by PJ, RACIS and INTERPOL officers who will be trained for operating the system portal and MMI (T9.6);
 - o SIIP and SISC functionalities;
 - o SIIP secured, privacy preserving model, for international info sharing of voiceprints and metadata.

T9.6 Field Tests results analysis and development of recommendations and findings on extensibility of technology to security domain

Results from SIIP assessment and validation will support development of recommendations and findings on the extensibility of the SIIP technology to security domain. These recommendations will explore several dimensions of extensibility, including scale (number of enrolments, range of environments in which cross-platform identification is possible); optimizing trade-offs between automated and analyst-driven identification to support highly reliable identification; and determining the minimum voice sample that can be used to support reliable identification.

Description of deliverables

D9.1) Validation and Performance Testing Methodology

D9.2) Validation and Performance Testing In-Progress POC Report

D9.3) Validation and Performance Testing Final Report and Recommendations

D9.4) Field Testing and End-User Training Final Report

2 OVERVIEW

From the 21st to the 22nd of November 2017, INTERPOL hosted the second and final SIIP Field Test & End-User Training at its General Secretariat premises in Lyon, France. The event's main objective was to validate the SIIP system's operational capabilities using a research database with real audio-recordings and to organize a set of workshops dedicated to training end-users in handling the SIIP system. Furthermore, the end-user feedback would contribute to enhance the technical tools and individual capabilities, improve the user interface portals and refine the different evaluation criteria.

The two-day event was organised as follows:

- First, the Consortium Meeting was held on 21 November. It was attended by a smaller audience comprising project partners involved in the execution of the Field Test. This rehearsal meeting had the objective to ensure the smooth organisation and execution of the final Field Test the following day by testing the equipment, ensuring the availability of necessary connection and infrastructure, fine-tuning any last-minute needs and demands and finalising coordination between the actors;
- Followed by the Field Test and End-User Training organised on 22 November and attended by a large audience consistent of consortium partners, numerous external participants, INTERPOL staff from different departments and European Commission representatives.

A social event was organised at the end of the rehearsal meeting, allowing the partners to get together and welcome the experts that committed to attend the final Field Test the following day. The social programme included a sightseeing boat tour combined with dinner, enabling the participants to engage in discussions and exchange opinions about the SIIP project in an informal setting.

3 PARTICIPANTS

3.1 Consortium Meeting

The first day rehearsal meeting was attended by the following consortium partners:

- Airbus Defence and Space
- Carabinieri, Italy
- Data Fusion International
- Idiap Research Institute
- INOV - INESC Inovação Instituto de Novas Tecnologias
- INTERPOL
- NUANCE
- Laboratory of Citizenship Sciences (Laboratorio di Scienze della Cittadinanza – LSC)
- Metropolitan Police (MET) UK
- Novetta
- OK2GO

- University of Groningen
- SAIL Labs Technology
- SINGULARLOGIC
- Synthema
- Verint
- Federal Criminal Police Office of Germany (Bundeskriminalamt - BKA)
- Portuguese Criminal Police (Policia Judiciaria - PJ)
- Warwick University

3.2 Field Test and End-User Training

The Final Field Test & End-User Training was attended by 110 participants representing more than 50 countries coming from a diverse range of backgrounds, with different but mutually complementary areas of expertise.

The attendees included representatives from the following categories:

- SIIP consortium members;
- External experts invited by INTERPOL, including:
 - Officers from over 40 law enforcement authorities (the BKA, Swiss Police, the General Department of Criminal Evidence of Kuwait, NCB² India, NCB Guinea-Bissau etc.);
 - Several INTERPOL directorates (i.e. Fugitive Investigative Support, Maritime Security, Counter-Terrorism, Information Security);
 - Representatives of academia and the private sector (i.e. research institutes, SMEs, providers of software and technological solutions in the field of speech and language technologies, technology developers).
- External reviewers from the European Commission.

The main profile of participants included investigators, intelligence analysts and operational personnel carrying out investigations in the field, providing their valuable points of view on the needs and requirements of end-users. In addition, people active in the field of speaker recognition, such as practitioners with a thorough experience of automatic systems, were present.

The second-day event attendees came from the following organisations:

- Australian Federal Police
- Home Office Digital, Data and Technology

² Each INTERPOL member country maintains a National Central Bureau (NCB) linking national police with INTERPOL's global network of NCBs. The NCBs are staffed by national law enforcement officers and typically located as a division of the national police agency or investigation service.

- Counter Terrorism Unit, Belgium Federal Police
- Digital Security, EURECOM
- Division of Identification and Forensic Science
- European Commission ERC
- ENFSI Expert Working Group Forensic Speech and Audio Analysis
- Estonian Forensic Science Institute
- Federal Police Limburg, Belgium
- Forensic Bureau, International Security Agency, Poland
- Forensic Science Centre of Lithuania
- L3S Research center, Leibniz University of Hannover
- Greek Police
- Inter-ministerial control group (GIC), France
- Financial Guard (GdF), Italy
- Hungarian Institute for Forensic Sciences
- Internal Security Forces, Lebanon
- Institute for Advanced Technologies, University of Virginia
- Ministry of the Interior of Croatia
- National Centre for Biometric Studies Pty Ltd Australia
- National Crime Agency UK
- National Central Bureau Bissau
- National Central Bureau India
- National Central Bureau Rabat
- NEC Japan
- National Forensic Institute, Romania
- French National Police
- Phonexia, Czech Republic
- Police Service of Northern Ireland
- Federal Police of Brazil
- Punjab Police, India
- French Forensic Police Office
- State Forensic Examination Committee of the Republic of Belarus
- Swedish Security Service
- Swiss Federal Criminal Police

Given the multidisciplinary nature of the SIIP project, throughout its lifespan, the project benefited from a global pool of experts in the field of speaker identification technology, comprising law enforcement, private sector and academia. Certain attendees of the Field Test have already engaged in past SIIP events and activities, by participating in the previous Field Test organised by the Portuguese Criminal Police in April 2017 or the Proof of Concept event held in June 2016 or by providing their feedback to the SIIP questionnaire circulated at the project's launch in July 2014.

4 DISCUSSIONS

This section covers the content of the discussions held during the second day meeting, the final Field Test.

4.1 Key note speech

██████████, ██████████ INTERPOL, inaugurated the event. As part of his keynote speech, ██████████ highlighted the heavy work that SIIP has done to explore the operational, technical, forensic, legal, societal and ethical perspectives related to the evolving field of speaker identification. Furthermore, ██████████ reminded the audience of the increasingly changing landscape shaped by on-going technological developments, under which LEAs worldwide have to operate. The INTERPOL ██████████ stressed the potential operational value that the combination of speaker identification with other biometric technologies such as fingerprints and facial recognition has, and how it could potentially enhance investigative capabilities and facilitate checks made against INTERPOL's databases.

4.2 SIIP overall presentation

Following the opening remarks by ██████████, the project coordinator, ██████████ from Verint, provided an overview presentation of the SIIP project. ██████████ presented the project's key aspects and outlined the project's milestones. The project coordinator reminded the audience of the SIIP research objectives (technological SIIP system use cases, info sharing procedures and methodologies, legal, ethical and societal acceptance) and the consortium expectations from the final Field Test (demonstrate the developed system, disseminate the project results and receive feedback from experts and end-users). The project coordinator concluded his intervention by inviting all the event guests and participants to introduce themselves, mentioning their background and project engagement.

4.3 Demonstration

To display the SIIP system's innovative capabilities and global info sharing mechanism, two LEA project partners (the UK Metropolitan Police and the Portuguese Criminal Police) performed live demonstrations of the system and its contribution to law enforcement work, while IDIAP presented the fusion algorithms.

The Metropolitan Police field test scenario focused on the identification of an unknown hate speech propagandist preaching in both English and Arabic on different Internet-supported channels. The unidentified speaker was compared to a reference database of known preachers. The SIIP system is capable of capturing speech files from a variety of sources, including open source internet search and imported material.

The Portuguese Criminal Police executed a scenario involving a robbery investigation based on lawfully intercepted mobile telephone conversations in Portuguese.

Both scenarios used real data. As part of the demonstrations, each law enforcement authority representative demonstrated the system's operation step by step: creation of case management file, creation of speaker of interest, data importation, segmentation and enrolment, creation of known speaker model, processing of audio for search against reference database, sharing audio with SISC (SIIP Sharing Center), analyses of output. The process was explained to the audience detailing the operation of the overall SIIP eco-system. The demonstration described the three levels of the system, precisely national police headquarters, centralized secured database at INTERPOL for analyzing and comparing voice samples and the tactical level based on portable devices such as smartphone or tablet. Based on this architecture, the SIIP eco-system entails an international info sharing mechanism of voiceprints and metadata. The SIIP-SISC portal operates on four pillars consistent of core, collection, enrollment and global. The system's functionalities were covered, i.e. age, gender, language, accent detection, search and filter database of reference speaker files. In both demonstrations, intelligence operators incorporated the automated speaker recognition engine outputs (i.e. ranked list of potential matches based on scores to confidence and likelihood ratio to scores) with other available relevant information.

Through these simulated live scenarios displaying the use of the SIIP portal based on real cases, the audience witnessed the system's innovative probabilistic, language independent capabilities based on the fusion of a variety of Speaker Identification (SID) engines able to identify unknown speakers in social-media/OSINT and lawfully intercepted channels. The tool can also be applied to recordings made directly at a crime scene. These demonstrations confirmed that the developed solutions are feasible in a variety of LEA investigation environments. Finally, the guests were shown the SIIP system's secured and privacy-preserving model built on privacy by design architecture.

4.4 Enrichment presentations

Following the SIIP system's live demonstrations, a number of enrichment presentations were made by different consortium partners to complement the Field Test event.

4.4.1 German Federal Police

██████████ from the German Federal Police (BKA) Language and Audio department (KT34) made a presentation on the "SIIP Benefits for Investigation and Intelligence". ██████████ gave an overview of the state of forensic speaker recognition research and development (existing projects, applicable international standards, norms and requirements). He then provided examples of the current application of voice biometry (commercial speaker identification such as telebanking and forensic voice comparison as part of prosecution and criminal courts activities). ██████████ described the benefits of voice biometry for investigation and intelligence, highlighting the SIIP solution's impact and potential exploitation from a European perspective. The identified benefits included:

- SIIP results confirm the potential applications of automatic SID using language-independent, multi-source database applications for investigative, intelligence purposes;
- SIIP has the potential to tackle transnational threats, terrorism, organized crime;
- SIIP complies with the Internal Security Strategy (ISS) of cooperation between EU LEAs and relevant third countries;
- SIIP delivers the necessary infrastructure for secure cross-border exchange of speech, speaker data.

Nevertheless, ██████████ cautioned that the human factor plays an important part within the SIIP expert system, so it should be taken into consideration alongside the knowledge and training aspects. Furthermore, he suggested that more testing with real data was required.

4.4.2 International Biometric Group

The International Biometric Group made an intervention on “Biometric Liveness and Presentation Attack Standards”. [REDACTED] started by defining the terms. Presentation attack refers to presentation to the biometric data capture subsystem with the goal of interfering with the operation of the biometric system in order to impersonate or obfuscate someone’s identity. Presentation attack detection (PAD) is an automated determination of a presentation attack, and liveness detection is a PAD technique employed by some biometric systems to detect presentation attacks. Turning on to the issue of standardization of presentation attack detection, the presenter outlined some of the reasons behind the standardization efforts (e.g. PAD susceptibility undermines the utility of biometric systems, to enable measure and understanding of PAD subsystem performance, etc.) and listed the published standards (i.e. ISO/EC 30107-1:2016, ISO/EC 30107-3:2017). Further on, some of the key concepts addressed in the international standards were explained (i.e. sensor/capture device, presentation attack instrument) and the measuring of PAD performance explained (12 PAD performance metrics, measuring places, etc.). Mr Thieme concluded his intervention by presenting some of the challenges and complications related to PAD and its future, mentioning how resource-intensive testing was, the effect of rapidly changing state of the art and the impact of machine learning on PAD development.

4.4.3 New Scotland Yard

[REDACTED] from the National Digital Exploitation Service (NDES) within the Counter Terrorism Policing at New Scotland Yard presented on the “Operational Potential of the SIIP system”. In line with NDES’s vision to be a world leading service, it plans to make the best use of new technology and strives to ensure that capabilities are developed and utilized efficiently. Within this context, the NDES operates the Digital Seven services (for the Metropolitan Police London) with responsibility for Communications Data Exploitation, Open Source Exploitation, Digital Media Exploitation, Lawful Interception, Technical Innovation and Development, Digital Biometric Exploitation, Digital Operations. With the exponential rise in media uploads, the Counter Terrorism Internet Referral Unit was formed in 2010. This unit is in charge of identifying harmful online content and seeking to remove it by contacting the hosting companies. [REDACTED] highlighted the potential of the SIIP solution to respond to future challenges by offering the global law enforcement environment a workable framework taking into consideration the ethical, legal and societal aspects. The identified SIIP use cases and benefits included:

- Lawful interception;
- Identifying persons responsible for the upload of harmful media;
- Identifying unknown third parties collected through covert or overt policing activity;
- Collaborative working to maximise language resource;
- Utilising the academic findings to assist in the creation of lawful and ethical frameworks.

4.4.4 Portuguese Criminal Police

The Portuguese Criminal Police made a presentation on the operational uses of SIIP. [REDACTED], [REDACTED] within the Portuguese Criminal Police, started by presenting the national legislative context (Internal Security Law n°58/2008 and the provision on control of communications, as well as the restrictive data protection requirements) within which SIIP would have to operate. [REDACTED] defined the operating monitoring system (e.g. all recordings in stereo), the tools used (Batvox Nuance software) and listed the means from which data can be collected (e.g. lawfully intercepted calls, emergency calls, internet support). On this background, [REDACTED] highlighted that SIIP could be used to perform fast 1 to N speaker recognition and speech recognition, whilst tactical SIIP can be used on the field when the voice of the target is known. Additionally the evidence processing and analysis use offered by SIIP was detailed, such as the creation of a case file in SIIP based on a request received from investigator, provision of comprehensive reports on audio tests, upload of voice prints, queries within SISC and local

databases (pending legislative revision). Another example of SIIP's operational use is the support to real-time field operations and quick tests given the system's simple interface and its ability to interconnect with field devices, and to accept data from various audio sources. Concerning judicial admissibility, [REDACTED] highlighted that according to Portuguese legislation, forensics voice examination does not qualify as evidence but would contribute to the judicial decision. Finally, [REDACTED] highlighted that the results obtained from 1-to-N comparisons performed by SIIP are pre-forensic, meaning that to be presented in court, it will always be necessary to ensure the suspect reference sample for forensic comparison and identification 1-to-1 (as in fingerprints, DNA and any other biometric method) and does not qualify as evidence but would contribute to the judicial decision. Mr Freitas outlined some of the encountered technical difficulties such as the inherent features of old recording systems, the short duration of useful audios and the degradation of the original quality of audio files during conversion to requested parameters.

4.4.5 Netherlands Forensics Institute

Finally, a presentation by [REDACTED] from the Netherlands Forensics Institute, was cancelled due to travel impediments. [REDACTED] input focused on providing some recommendations to the SIIP system once it becomes operational, such as ensuring support by technical staff and forensic speech experts, and database maintenance (e.g. back-up, update).

5 END-USER TRAINING

The original objective of the training session was to organise a set of workshops dedicated to the training of potential SIIP end-users (technical personnel, intelligence analysts and operational personnel carrying out investigations) on the operation, features and capabilities of the developed system. Given the composition of the Field Test participants as described in Section 2, comprising law enforcement representatives from a diverse background, one can conclude that the targeted audience was successfully gathered. However due to the large turn-out, exceeding the expectations at the time of drafting the SIIP DoW, the individual hands-on training session had to be converted to a lecture type public training held in INTERPOL's main conference hall. To facilitate the training session, a hard copy of the End-User Manual was distributed to participants, enabling them to simultaneously follow the explanations and refer to the Manual when necessary.

Singular Logic conducted the training session, navigating the audience throughout the SIIP system and explaining its features and capabilities as demonstrated during the field environment scenarios earlier in the day by the Metropolitan Police and the Portuguese Criminal Police. In addition, the trainer referred to the End-User Manual and SIIP portal updates. Singular Logic expanded on the content of the End-User Manual, which includes definition of main use cases and of execution scenarios implementing those use cases. The end-user feedback provided throughout the project's lifespan contributed to the revision of the preliminary Manual and compiled training material. As a result, an extra chapter was added explaining media upload and import, flow diagrams were included in each chapter, further information was provided to ensure greater clarity. In addition to Manual revision, end-users' input was integrated as part of the technical work packages to enhance the developed tools and individual capabilities, to modify the user interface portals (WP7) and to refine the different evaluation criteria (WP9). Among the portal updates was mentioned the addition of a new use case, and the UI/UX enhancements e.g. display of audio file's name under speaker's profile, visibility of engine results in case of no speaker match. To ensure an interactive training session, the floor was open to the audience which to intervene and raise questions or request additional information as to the system's performance.

6 DISSEMINATION

Various means have been employed to inform the stakeholders about the organization of the event and to ensure the widest dissemination of the Field Test results. Prior to the event, a notice was published on the INTERPOL official website³ informing about the purpose of the Field Test, the sought expertise of participants and including a link to the SIIP website, where registration for the event was possible.

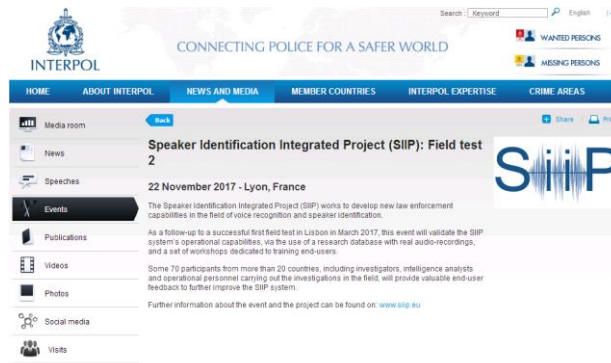


Figure 1. Print screen of the informative note about the SIIP Field Test on INTERPOL's website

³ <https://www.interpol.int/News-and-media/Events/2017/Speaker-Identification-Integrated-Project-SIIP/Speaker-Identification-Integrated-Project-SIIP-Field-test-2>

The project's website also displayed a Field Test announcement which included a description of the event, invitation, event agenda, SIIP factsheet and SIIP brochure.⁴



SIIP
Speaker Identification Integrated Project
Privacy Enhanced Speaker Identification at Global Reach

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Upcoming Conference - 22 November 2017

SIIP Field Test at Interpol General Secretariat - Lyon, France

SIIP
Lyon, France 1 November 22 2017

Following the successful demonstration of the SIIP system through the Field Test hosted by the Polícia Judiciária in Lisbon on 29 March 2017, a second Field Test of the SIIP system followed by End-user Training will be held at the INTERPOL General Secretariat in Lyon on 22 November 2017. A key objective of the second field test is to provide LSA-end-users an interactive experience of operating the system. Participants are expected to include police investigators, speaker identification experts and Interpol officials.

If you wish to attend this event, please complete the form below no later than October 05, 2017.

Make sure to fill your details precisely as in your passport

[Invitation and Agenda](#)
[Speaker Identification Integrated Project \(SIIP\)](#)
[SIIP factsheet](#)
[Location and recommended Hotels](#)
[map](#)

Make sure to fill your details precisely as in your passport

Full Name
Job Title
Message
Phone
Company
Email
Country
Choose Country

Figure 2. Print screen of the registration page on the SIIP website

A video promoting the SIIP project and explaining how the system works was published on the INTERPOL official website⁵ and the SIIP website.⁶ The video provides an overview of the project, the consortium members and explains how voice recordings are collected and processed and how this could serve to identify criminals.

⁴

⁵ [https://www.interpol.int/News-and-media/Videos/\(video_id\)/35605](https://www.interpol.int/News-and-media/Videos/(video_id)/35605)

⁶



Figure 3 & 4. Print screen of the SIIP explanatory movie available on the INTERPOL and SIIP websites

INTERPOL updated its SIIP factsheet (available in French, Spanish, English and Arabic) in order to reflect the latest project developments, such as the outcome of the Proof of Concept event held at the Carabinieri School in Rome in June 2016 and the contribution of the first Field Test organized in Lisbon in March 2017. This latest version of the SIIP factsheet, available in Annex, also announced the final Field Test to be hosted by INTERPOL.

The page dedicated to the SIIP project on the INTERPOL website was also updated accordingly.⁷

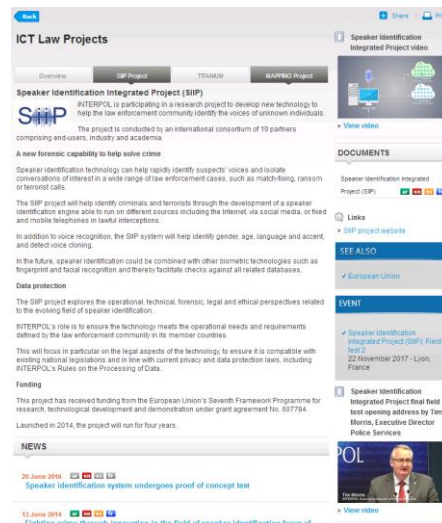


Figure 5. Print screen of the SIIP page on the INTERPOL website

The INTERPOL Communications departments provided live event support during the SIIP Field Test, ensuring filming, photography and post-production, as well as web support with press release drafting and publication. Some of the pictures were published afterwards on the SIIP website.⁸

⁷ <https://www.interpol.int/About-INTERPOL/Legal-materials/ICT-Law-Projects/SIIP-Project>

⁸ [REDACTED]

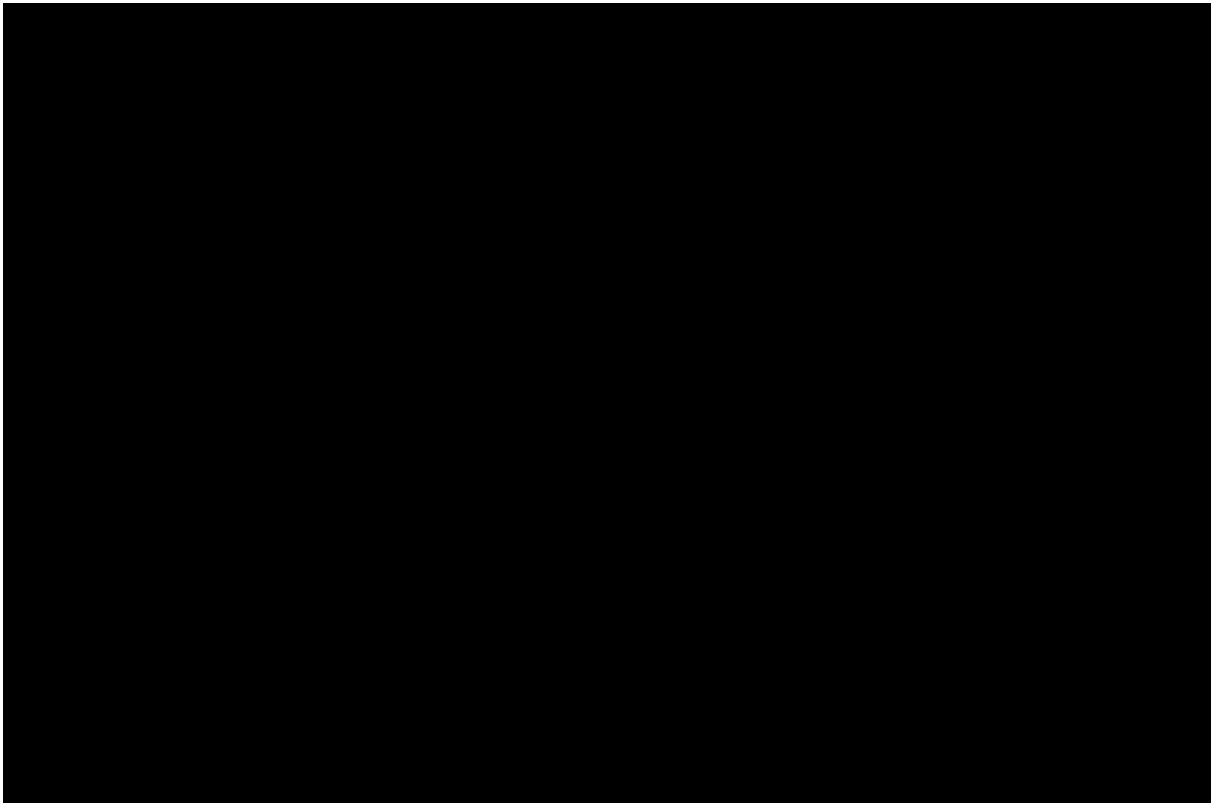


Figure 6. Picture taken during the Field Test event

The video material prepared includes a flash video report⁹ published on YouTube under the INTERPOL channel, as well as videos of the different individual presentations.

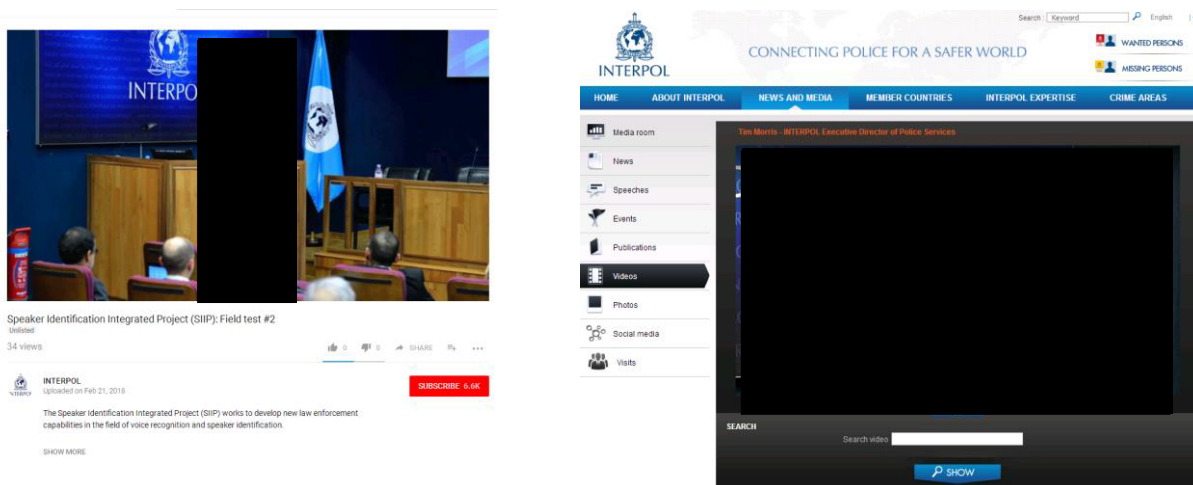


Figure 7 & 8. Print screen of the video material available on YouTube and INTERPOL website

In addition, a video of the key note speech made by [REDACTED] INTERPOL [REDACTED] was published on the INTERPOL official website.¹⁰

Following the event, a press release was published on the INTERPOL internal website highlighting the event outcomes to a worldwide audience of 192 member countries.

⁹ <https://www.youtube.com/watch?v=i7jEEyYiCjk&feature=youtu.be>

¹⁰ [https://www.interpol.int/News-and-media/Videos/\(video_id\)/38492](https://www.interpol.int/News-and-media/Videos/(video_id)/38492)

**Speaker Identification Integrated Project
passes final field test
27 November 2017**

LYON, France – In its final field test, the Speaker Identification Integrated Project (SiIP) successfully demonstrated the system's innovative capabilities as language independent voice recognition system.



Using a database with real audio recordings, the UK's Metropolitan Police Service and the Portuguese Polícia Judiciária, demonstrated how unknown speakers talking in different languages could be identified through social media or lawfully intercepted audios using a fusion of key markers such as gender, age, language and accent.

Some 110 speaker identification researchers and experts, forensic experts, intelligence analysts and police investigators from more than 50 countries participated in the event.

The four-year (May 2014 – April 2018) European Union-funded research project is run by an international consortium of 19 partners who developed this cutting-edge speaker identification technology to help law enforcement agencies identify voices of unknown individuals.

As a full project partner, INTERPOL focuses on ensuring the speaker identification technology meets the operational needs and requirements of law enforcement while guaranteeing that the legal aspects of the technology are compatible with existing national legislation including INTERPOL's Rules for the Processing of Data and safeguards for individual privacy.

For more information visit the SiIP project website [\[redacted\]](#)

Figure 9. Print screen of the press release published on the INTERPOL internal website

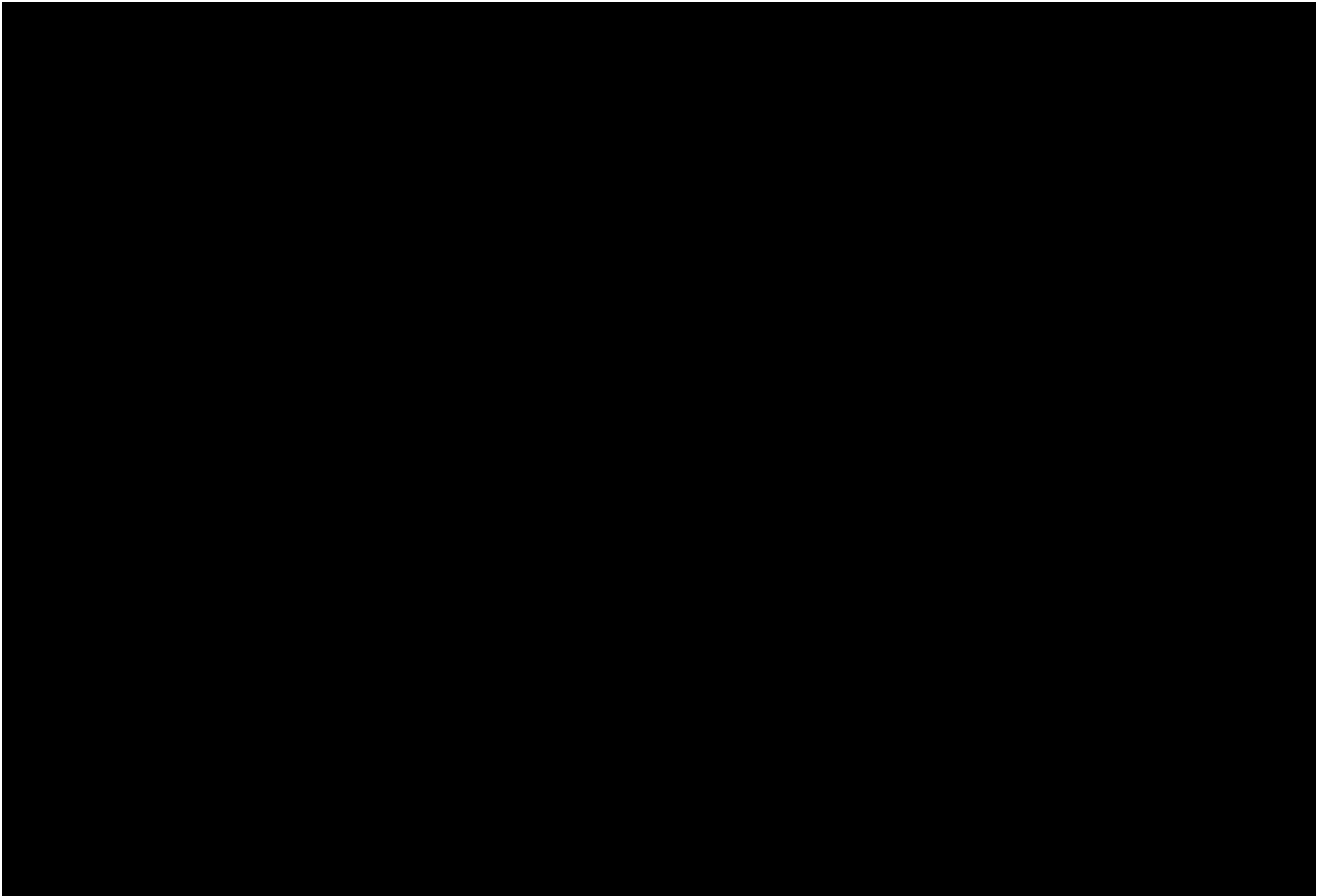
7 CONCLUSION

This report covered the SIIP Field Test and End-User Training held at the INTERPOL General Secretariat in November 2017. This event represented the second and final field test organised to run the SIIP system in order to demonstrate its performance and capabilities before the project's closure. The event also provided an opportunity to familiarise a large audience of stakeholders (investigators, intelligence analysts, technical staff and operational personnel carrying out investigations in the field) with the system's operation and capabilities, and to distribute associate training material, i.e. End-User Manual. The event achieved the objectives set in the DoW referred to in **Box1**, and responded to the participants' expectations based on the positive feedback received from the consortium partners and the other attendees.

After close interaction and validation of SIIP system by dozens of LEAs from all over the world during the proof of concept and the two field test events, it appears that there is significant demand and need for SIIP system among LEAs as it may expedite significantly the police work and assist in delivering a much more efficient investigatory process in the area of voice recognition, supplemented by the human factor as highlighted throughout the project. The role of advanced speaker identification in tackling global crime is constantly increasing and SIIP provided a unique platform for testing and deployment of cutting-edge technologies for potential use by law enforcement around the world. Furthermore, the results derived from the SIIP assessment and validation actions will feed into the recommendations regarding the extensibility of the SIIP tool to the security field.

ANNEXES¹¹

ANNEX 1: Group photo



¹¹ Double click on the annexes to open the full PDF file

ANNEX 2: Event agenda



2nd SiIP Field Test & End-User Training

Agenda - 22nd November, 2017

INTERPOL General Secretariat, Lyon, France

Time	Session	Presenter
08:30 - 09:30	Registration and reception	
09:30 - 09:40	Opening words and welcome	 INTERPOL
09:40 - 10:00	SIIP overview	Verint (Israel)
10:00 - 10:10	SIIP user manual introduction	
10:10 - 10:25	Introduction of the guests and participants	
10:25 - 11:00	SIIP demo	Metropolitan Police (UK)
11:00 - 11:20	SIIP demo	IDIAP (Switzerland)
11:20 - 11:40	Coffee break	
11:40 - 12:15	SIIP demo	Polícia Judiciária (Portugal)
12:15 - 13:00	<u>Enrichment presentations:</u>	
	i.	Bundeskriminalamt (Germany)
	ii.	International Biometric Group (UK)
	iii.	Portuguese Criminal Police
13:00 - 13:10	Group Photo	
13:10 - 14:00	Lunch	

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27 April 2018



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 607784

ANNEX 3: Template invitation letter



Invitation

Date 21 August 2017

Our Ref. LA/51275-51/5.4/FHS/XB

Contact Office of Legal Affairs
ICT Law Unit
SIIP@interpol.int

Subject Invitation to the Speaker Identification Integrated Project (SIIP) Field Test N°2 and End-user Training – 22 November 2017, Lyon, France

Dear Mr ,

INTERPOL is participating as a full partner in the *Speaker Identification Integrated Project (SIIP)*, a European Union funded research project which focuses on speaker identification technologies and aims to assist the international law enforcement community in identifying criminals at the international level. One of the project's objectives is to develop a criminal identification solution in the field of speaker identification ('the SIIP solution') which would be based on a "privacy-by-design" approach and data protection mechanisms.

This four-year project was launched at the INTERPOL General Secretariat in June 2014 and is conducted by an international consortium of 19 partners bringing together law enforcement agencies, small and medium enterprises, the industry and the academia. INTERPOL aims to ensure the SIIP solution would be compliant with INTERPOL's rules and regulations, notably the Rules on the Processing of Data.

Following the presentation of the SIIP system through the Field Test hosted by the Policia Judiciaria in Lisbon on 29 March 2017, a second Field Test of the SIIP tool & End-user Training will be held at the at the INTERPOL General Secretariat in Lyon on 22 November 2017. It is our pleasure to invite you as expert to the upcoming event. The purpose of this event is to validate the system's operational capabilities involving the use of a research database with real audio-recordings, and to organize a set of workshops dedicated to the training of end-users in the handling of SIIP system. A key outcome of the second field test is to provide end-users, including INTERPOL officials, with training materials designed within the scope of the project. Participants are expected to include investigators, intelligence analysts and operational personnel carrying out the investigations in the field. The end-user feedback will be used to enhance the technical tools and individual capabilities, to modify the user interface portals and to refine the different evaluation criteria.

We would appreciate of you can respond to this invitation to siip@interpol.int by no later than Wednesday, 1 October 2017. The draft agenda is attached together with detailed event information and logistics.

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ANNEX 4: SIIP updated factsheet

A) English version


July 2017





SPEAKER IDENTIFICATION INTEGRATED PROJECT (SIIP)

Privacy Enhanced
Speaker Identification



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement N° 607784.

INTERPOL is participating in a four-year European Union-funded research project (May 2014 – April 2018) on speaker identification technology which is comprised of an international consortium of 19 partners including end-users, industry and academia. This project **was launched in 2014 at the INTERPOL General Secretariat** during a meeting which brought together law enforcement agencies, academia and industry.

B) French version

Juillet 2017



PROJET INTÉGRÉ D'IDENTIFICATION DU LOCUTEUR (SIIP)

Identification du locuteur selon
des critères élevés de protection
de la vie privée

INTERPOL participe à un projet de recherche de quatre ans (de mai 2014 à avril 2018) sur les technologies d'identification du locuteur, financé par l'Union européenne et mené par un consortium international de 19 partenaires, parmi lesquels des utilisateurs finaux, des représentants du secteur privé et des universitaires. Ce projet a été lancé en 2014, lors d'une réunion au Secrétariat général d'INTERPOL qui rassemblait des représentants de services chargés de l'application de la loi, du monde universitaire et du secteur privé.

Objectifs

Les partenaires du projet SIIP travaillent à la conception d'une technologie d'identification du locuteur à la pointe du progrès, qui aidera les services chargés de l'application de la loi à identifier la voix d'inconnus. Les voix enregistrées proviendront de différentes sources, notamment d'écoutes téléphoniques légales ou d'enregistrements effectués lors d'enquêtes judiciaires ou en lien avec le terrorisme, y compris sur les médias sociaux.

Le projet étudie les aspects opérationnels, techniques, scientifiques, juridiques et éthiques de l'identification du locuteur, qui constitue un domaine en pleine évolution.



Ce projet bénéficie du soutien financier du septième programme-cadre de recherche, de développement technologique et de démonstration de l'Union européenne (Convention de subvention N° 607784).

C) Spanish version

Julio de 2017



PROYECTO SIIP (SPEAKER IDENTIFICATION INTEGRATED PROJECT)

Identificación de hablantes
según normas estrictas de
protección de la privacidad

INTERPOL participa en un proyecto de Investigación sobre tecnología de identificación de hablantes, de cuatro años de duración (de mayo de 2014 a abril de 2018), financiado por la Unión Europea y llevado a cabo por un consorcio de 19 socios, entre los que figuran usuarios finales y representantes del sector privado y del mundo académico. Este proyecto se inició en 2014 en el marco de una reunión celebrada en la Secretaría General de INTERPOL, a la que asistieron representantes de los organismos encargados de la aplicación de la ley, el sector privado y el mundo académico.

Objetivos

Los socios del proyecto SIIP trabajan conjuntamente para desarrollar una tecnología puntera de identificación de hablantes que pueda ayudar a las fuerzas del orden a identificar voces de personas desconocidas. Las grabaciones de voces pueden haberse obtenido de muy distintas maneras, por ejemplo, en el contexto de escuchas telefónicas legales o de grabaciones efectuadas en el marco de investigaciones penales o relacionadas con el terrorismo, incluidas las grabaciones realizadas a través de medios sociales.

El proyecto estudia los aspectos operativos, técnicos, forenses, jurídicos y éticos de la identificación de hablantes, un área en continua evolución.



Este proyecto ha recibido financiación concedida en el marco del Séptimo Programa Marco de la Unión Europea para acciones de Investigación, desarrollo tecnológico y demostración, en virtud del acuerdo sobre subvenciones nº 607784.

D) Arabic version

تموز/يوليو 2017



المشروع المتكامل لتحديد هوية الشخص من صوته (SIIP)

يشارك الإنترنت في مشروع بحث يموله الاتحاد الأوروبي على مدى أربع سنوات (أيار/مايو 2014 - نيسان/أبريل 2018) ويتعلق بتكنولوجيا تحديد هوية المتحدث. وينفذ المشروع تحالف دولي يتألف من 19 جهة شريكة تضم المستخدمين النهائيين، وشركات القطاع الخاص، والأوساط الأكاديمية. وأطلق هذا المشروع في عام 2014 في الأمانة العامة للإنترنت خلال اجتماع ضم أجهزة إنفاذ القانون والأوساط الأكاديمية وشركات القطاع الخاص.

مراعاة الخصوصية في مجال تحديد
هوية الشخص من صوته

تلقى هذا المشروع تمويلاً من البرنامج الإطاري السابع للاتحاد الأوروبي للبحوث والتنمية التكنولوجية والتجارب بموجب اتفاق المنحة المرقم 487706.



الإنترنت - للاستخدام الرسمي فقط