

# STANDARD TWINNING LIGHT PROJECT FICHE

## 1. Basic information

- 1.1 Publication notice reference:
- 1.2 Programme: Transition Facility IPA/2013/24986 (Annex of C (2013) 8057 final); Institution Building Envelope
- 1.3 Twinning Number: HR 14 IPA JH 03 16 TWL R
- 1.4 Title: Advanced biostatistics in routine forensic DNA casework (CRO STAT)
- 1.5 Sector: Justice and Home Affairs
- 1.6 Beneficiary country: Republic of Croatia

## 2. Objectives

### 2.1 Overall objective:

The overall objective is to enhance the capacities of the Ministry of Interior (MoI) of the Republic of Croatia to effectively combat crime in line with the related European policies and strategies.

### 2.2 Project purpose:

The project purpose is to develop procedures for implementing and using of advanced statistical programs for DNA mixtures and familial/relatives search and to train forensic DNA experts in order to enhance the efficiency of the Forensic Science Centre (FSC) "Ivan Vučetić" of the MoI and to consequently increase police and judicial cooperation.

### 2.3 Contribution to Accession Treaty/Relevant national documents:

#### **Accession Treaty**

Following the signature of the Accession Treaty on 9 December 2011 and its ratification procedure in the Member States, Croatia joined the European Union on 1 July 2013 as the 28<sup>th</sup> Member State. This Twinning light project will contribute to the objectives set in Accession Treaty. The Republic of Croatia will continue with "the implementation and enforcement of Union requirements with respect to external border management, police cooperation, the fight against organized crime, judicial cooperation in civil and criminal matters".

#### **The Treaty on the Functioning of the European Union**

This Twinning light project is in line with the objectives of the Treaty on the Functioning of the European Union: "The Union shall establish police cooperation involving all the Member States' competent authorities, including police, customs and other specialized law enforcement services in relation to the prevention, detection and investigation of criminal offences (...) European Parliament and the Council (...) may establish measures concerning:

- (a) the collection, storage, processing, analysis and exchange of relevant information;
- (b) support for the training of staff, and cooperation on the exchange of staff, on equipment and on research into crime-detection;
- (c) common investigative techniques in relation to the detection of serious forms of organized crime.”

**Council framework decision 2009/905/JHA on accreditation of forensic providers carrying out laboratory activities.**

This Twinning light project is in line with the objectives of the Council framework decision 2009/905/JHA: “The European Union has set itself the objective of maintaining and developing the Union as an area of freedom, security and justice; a high level of safety is to be provided by common action among the Member States in the field of police and judicial cooperation in criminal matters. That objective is to be achieved by preventing and combating crime through closer cooperation between law enforcement authorities in the Member States, while respecting the principles and rules relating to human rights, fundamental freedoms and the rule of law on which the Union is founded and which are common to the Member States.”

**European Security Strategy**

This Twinning light project is in line with the European Security Strategy: “An active and capable European Union would make an impact on a global scale. In doing so, it would contribute to an effective multilateral system leading to a fairer, safer and more united world.”

**Strategic plan for the Ministry of Interior and other institutions involved in protection and rescue for the period 2016 - 2018**

This Twinning light project is in accordance with the objective “Decrease criminal behavior” set in the Strategic plan which, inter alia, sets the following goals: to reduce the risk of criminal behaviour, improve prevention of criminal behaviour and to improve crime prevention. Methods of achieving the abovementioned goals are following: improving the work of the criminal police, improving the effectiveness of combating corruption and organized crime and strengthening cooperation between the police and the judiciary.

This Twinning light project will contribute to the achievement of objectives identified within the abovementioned documents through activities aimed at enhancing the efficiency of the FSC “Ivan Vučetić” thus increasing the efficiency of MoI in fighting against crime and contributing to more efficient cooperation between police and judiciary.

### **3. Description**

#### **3.1 Background and justification:**

Forensic science mostly relies on inferring conclusions from the DNA evidence obtained from crime scenes or from case samples delivered to the laboratory. The strength of DNA evidence is often closely related to statistical calculations, making statistics and forensic biology two inextricably linked areas. Therefore, it is crucial to include statistical calculations into the FSC “Ivan Vučetić” work routine in order to reduce the possibility of mistake when detecting the identity of the criminal offence perpetrator.

To answer such challenges, it is necessary to apply statistical knowledge and calculate the one value that will help assess the relevance of the obtained result. This value is called the

likelihood ratio; an odd of two probabilities (a numerical value) representing two mutually exclusive hypotheses; the first being the probability that the DNA came from the suspect and the other being the probability that the same DNA came from another source (an unrelated, random person from the population).

The presence of three or more alleles at multiple loci typed constitutes a DNA mixture. In some cases it is relatively easy to determine a contributor profile, but more cases arise where DNA mixture profiles are partial, due to degraded DNA specimens or low copy number samples. Dealing with complex DNA mixtures obtained from degraded and low copy number samples also means difficulties with peak height imbalance, stutter products, one or more alleles that are shared, allele drop-out, allele drop-in, higher probability of contamination, etc. Although the interpretation of some DNA profiles can be very difficult, it is important to obtain reliable results which can be taken into account as legal evidence.

FSC “Ivan Vučetić” currently uses CODIS Popstats v.7.0 software for statistical calculations which does not enable interpretation of complex DNA mixtures or complex relationships interpretation. Free statistical software LRmix Studio dedicated to forensic DNA mixtures interpretation and free statistical software Familias for interpreting complex relationships had been developed and the usage of these softwares is widespread through the forensic community. To enable the full use of the data and include different suspects, it is necessary to learn and understand how the software for mixture interpretation works.

The knowledge of procedures for using a statistical program “LRmix Studio” for interpretation of complex DNA mixtures would enable and improve the interpretation of complex DNA mixtures. In case of a direct comparison of DNA profiles from a sample and from a suspect, calculations are relatively simple as they include only two possible hypotheses and do not include complex family relationships. However, forensic cases are rarely that simple or straightforward since they include more complex situations, like paternity testing, identification of human remains, mass disaster victims and war fatalities. Even greater challenge to statistical analysis and interpretation of forensic DNA evidence impose cases with close relatives who are genetically very similar because they share a part of the genetic material.

Furthermore, the knowledge of procedures for using free statistical program “Familias” for calculating relatives could help state forensic laboratory improve and expand current practices in interpretation of DNA evidence in complex relationships, providing the strong statistical background on results that can be inferred from both DNA and non-DNA data collected from living relatives of the victims. The program would be most useful in identification of unidentified human remains, crime victims, and victims of fatal accidents, particularly in cases where DNA data from only one living relative is most often available. In addition, it could be used in paternity testing cases, broadening the laboratory’s practices in forensic biology.

Through this Twinning light project, which will define operation procedures and train forensic DNA experts for advanced biostatistics for DNA mixtures and familial/relatives and thereby facilitate incorporating the statistical programs into daily laboratory work, new opportunities will be ensured such as introduction of new methodologies for obtaining more DNA data and its multiple and effective usage along with providing essential statistical support to DNA evidence when it is presented in courts.

### 3.2 Linked activities:

#### **IPA 2013 Strengthening capacities of the Ministry of the Interior to implement the automated exchange of DNA and dactyloscopic data**

This project consists of two components: Twinning (HR 13 IPA JH 02 16) and Supply. The purpose of the Supply component is to procure and install automated robotic equipment for DNA analyses, and to educate the staff on usage of the procured equipment. The purpose of twinning component is to develop procedures for the automated exchange of DNA and dactyloscopic data and training of forensic science experts in order to establish preconditions for implementation of Prüm Decisions. The equipment from the Supply component is expected to be procured and installed by 1st quarter 2017, while the start of the implementation of the Twinning component is tentatively envisaged for 3rd quarter 2017.

#### **Transition Facility – Institution Building Envelope “Disaster victim identification in natural and accidental disasters and terrorism acts (CRO DVI)”**

The purpose of this Twinning project (HR 14 IPA JH 04 16) is to improve efficiency of FSC “Ivan Vučetić” in order to provide fast and effective response in case of mass disaster incidents (MDI) through acquisition of knowledge and skills as well as experience exchange within the international environment. The project is expected to start in the 4th quarter 2016.

#### **Transition Facility – Institution Building Envelope “Implementing Next Generation Sequencing (NGS) technology in DNA forensic science laboratory” (CRO NGS)**

The purpose of this Twinning project (HR 14 IPA JH 05 16 R) is to develop procedures for implementing and using of the Next Generation Sequencing (NGS) technology and training forensic DNA experts in order to upgrade efficiency of forensic science DNA laboratory of the MoI to effectively combat crime. The project is expected to start in the 1st quarter 2017.

#### **Transition Facility – Institution Building Envelope “Biometric face identification“**

The purpose of this Twinning light project (HR 14 IPA JH 02 16 TWL) is to increase capacities of forensic experts in the Department of dactyloscopy and identification within the FSC “Ivan Vučetić” in the area of facial biometric identification. The project is expected to start in the 4th quarter 2016.

#### **TAIEX “Statistical evaluation of forensic DNA evidence using LRmix program”**

This study visit to University of Copenhagen, Department of Forensic medicine, Denmark, lasted from 23 March 2015 until 27 March 2015. The purpose of this study visit was to collect basic knowledge of forensic DNA mixture interpretation using free statistical software program LRmix, which has consequently improved knowledge on statistic calculation and interpretation of forensic DNA mixtures in DNA laboratory of the FSC “Ivan Vučetić”.

There is no overlapping between the mentioned projects and this Twinning light project in which the efficiency of the FSC “Ivan Vučetić” will be upgraded through development of the procedures for advanced biostatistics and with developed training programmes and conducted workshops related to DNA mixtures and familial/relatives search.

### 3.3 Results:

Result 1: Standard Operation Procedures for advanced biostatistics for DNA mixtures prepared

Indicators of achievement:

- Based on analysis of the FSC work processes related to advanced biostatistics for DNA mixtures and round-table discussions with at least 5 participants, the Standard Operation Procedures<sup>1</sup> for advanced biostatistics for DNA mixtures prepared

Result 2: Standard Operation Procedures for advanced biostatistics for familial/relatives search prepared

Indicators of achievement:

- Based on analysis of the FSC work processes related to advanced biostatistics for familial/relatives search and round-table discussions with at least 5 participants, the Standard Operation Procedures<sup>2</sup> for advanced biostatistics for familial/relatives search prepared

Result 3: Capacity of forensic DNA experts in the area of advanced biostatistics for DNA mixtures strengthened

Indicators of achievement:

- Training needs analysis (TNA) of forensic DNA experts related to biostatistics for DNA mixtures conducted and TNA report prepared
- Long-term training programme and training manual for advanced biostatistics for DNA mixtures prepared
- At least 2 workshops for at least 10 forensic DNA experts in total related to advanced biostatistics for DNA mixtures organized and conducted

Result 4: Capacity of forensic DNA experts in the area of advanced biostatistics for familial/relatives search strengthened

Indicators of achievement:

- Training needs analysis (TNA) of forensic DNA experts related to advanced biostatistics for familial/relatives search conducted and TNA report prepared.
- Long-term training programme and training manual of advanced biostatistics for familial/relatives search prepared.
- At least 2 workshops for at least 10 forensic DNA experts in total related to advanced biostatistics for familial/relatives search organized and conducted.

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<sup>1</sup> It is envisaged that Standard Operation Procedures for advanced biostatistics for DNA mixture will cover detailed instructions and procedures related to interpretation of DNA mixtures, including search, databasing, statistical interpretation and reporting results.

<sup>2</sup> It is envisaged that Standard Operation Procedures for advanced biostatistics for familial/relatives search will cover detailed instructions and procedures related to familial/relatives search, databasing, statistical interpretation of obtained results and reporting results.

### 3.4 Activities:

**Member State(s) is kindly requested to develop activities in the submitted proposal which are needed in order to achieve the results stipulated in the fiche.**

Minimum two visibility events will be organized in the course of the implementation of the project; Kick-off meeting at the start of the implementation and the Final meeting at the end of the implementation of the project activities.

### 3.5 Means/ Input from the MS Partner Administration:

MS Project Leader may participate in the project also as the short-term expert (STE) and in this case the MS Project Leader should satisfy requirements stipulated in the fiche for both the Project Leader and the relevant STE profile.

#### 3.5.1 Profile and tasks of the Project Leader

Profile of the Project Leader

Requirements:

- University level education or equivalent professional experience of 10 years in forensics
- Minimum 4 years of professional experience in law enforcement
- Working level of English language
- Proven contractual relation to public administration or mandated body, as defined under Twinning manual 5.4.5.
- Computer literacy
- Experience in project management

Assets:

- Experience in forensic biostatistics
- Experience in international police cooperation
- Experience in organizing and conducting trainings

Tasks of the Project Leader:

- Overall coordination and co-managing the implementation of the project in cooperation with the BC Project Leader
- Ensuring sound implementation of the envisaged activities and, if necessary, proposing remedial actions
- Coordinating the MS experts' work and availability
- Project reporting
- Ensuring backstopping and financial management of the project in the MS
- Supervising and coordinating implementation of the project
- Providing efficient leadership of the project
- Participation in Steering Committee meetings

#### 3.5.2 Profile and tasks of the short-term experts

## Profile of the Short Term Expert

### Requirements:

- University level education or equivalent professional experience of 8 years in forensics
- Minimum 3 years of experience in forensic DNA biostatistics
- Working level of English language
- Proven contractual relation to public administration or mandated body, as defined under Twinning manual 5.4.5.
- Computer literacy

### Assets:

- Experience in forensic DNA analysis
- Experience in field of forensic DNA biostatistics for familial/relatives search
- Experience with statistical program “Familias”
- Experience in field of forensic DNA biostatistics for DNA mixtures
- Experience with statistical program “LRmix Studio”
- Experience in organizing and conducting trainings

### Tasks of the Short-term expert:

- Close cooperation with the Croatian experts in undertaking all activities
- Providing professional advice to Croatian experts during the project implementation period
- Preparing Standard Operation Procedures in the field of advanced biostatistics for DNA mixtures and for familial/relatives search
- Organizing and conducting round table discussion
- Conducting training needs analysis (TNA) for the forensic DNA experts regarding advanced biostatistics for DNA mixtures and for familial/relatives search and preparing corresponding TNA report
- Preparing training programme and training manual
- Organizing and conducting workshops

### Note:

The pool of experts should include:

- At least one short-term expert who in addition to the respective profile requirements has experience in forensic DNA biostatistics for familial/relatives search
- At least one short-term expert who in addition to the respective profile requirements has experience in forensic DNA biostatistics for DNA mixtures

## 4. Institutional Framework

The beneficiary institution of the project is Ministry of Interior of the Republic of Croatia. Forensic Science Centre “Ivan Vučetić” is a part of the General Police Directorate of the MoI. It provides forensic expertise in the following areas: documents, DNA, drugs, fibers, finger prints, firearms, fire and explosion, handwriting, marks, paint, road accident analysis, cybercrime and when needed crime scene investigations and forensic services to the Ministry of Defense and the Customs. Forensic experts’ reports are sent to the ordering authority and become part of important documentation in the course of criminal

investigation and judicial proceeding. Forensic science experts are often called upon the main hearing in court in order to corroborate the evidences according to their expertise. The knowledge of using a statistical program for interpretation of complex DNA mixtures and interpretation of DNA evidence in complex relationships will be of great advantage and a step-up in the FSC “Ivan Vučetić” work.

The Department of Biology and Fibers within the FSC “Ivan Vučetić” performs biological expertise, mainly DNA analysis of any kind of biological traces and referent samples for comparison and will be directly involved in implementation of this project. Croatian national DNA database is held in the Department of Biology and Fibers.

The Department of Biology and Fibers, section of biology employs 24 persons, out of which 18 employees are forensic science experts of 3 different ranks, 5 employees are laboratory technicians and one person is an administrative officer.

The results of this Twinning light project will not lead to a change of the institutional framework.

Two Steering Committee meetings will be held for the purpose of reviewing the progress made under the project as well as to discuss results achieved and/or problems occurred. The first Steering Committee meeting will be held during the third month of project activities implementation in order to discuss and comment the draft start-up report. The second Steering Committee meeting will be organised during the last month of the implementation period of the Action to discuss the draft final report.

It should be noted that the participation of the Member State Project Leader in Steering Committees meetings has to be combined with expert missions in case the Member State Project Leader is also a short-term expert in the twinning light project. If the Member State Project Leader is not short-term expert in the twinning light project then his visits to Croatia, (one visit every three months) as part of his overall task to ensure coordination and political steering of the project, should be organised at the same time as the two Steering Committee meetings of the project.

The exact participants of the Steering Committee meetings will be defined during the implementation of the project, but will at least include the following members:

- BC Project Leader
- MS Project Leader
- CFCA Project Manager
- MRDEUF Sector Manager

The beneficiary is committed to provide all necessary infrastructure such as office space and desktop computers with internet connection for experts, venue for holding seminars and workshops, and to ensure the necessary local staff/experts inputs.

## 5. Budget

Advanced biostatistics in routine forensic DNA casework (CRO STAT)	Transition Facility Contribution	National Co-financing	TOTAL
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Twining light Contract	90% 135.000,00 EUR	10% 15.000,00 EUR	150.000,00 EUR
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*The total amounts of the Transition Facility Contribution and National Co-financing stipulated in the above table represent the total maximum amounts and therefore, they may be reduced at the level of the Twining light contract, while the relevant ratio (percentages) should be maintained as fixed.*

*The co-financing requirement foreseen under Transition Facility will be considered fulfilled according to the provision of the relevant Financing Decision.*

Interpretation costs will be reimbursed from the budget only for the purpose of workshops and seminars, up to 7% of the Contract amount can be used for translation and interpretation purposes.

Provisions for visibility costs and expenditure verification costs should be included in the budget.

## **6. Implementation Arrangements**

### 6.1 Implementing Agency responsible for tendering, contracting and accounting:

Central Finance and Contracting Agency (CFCA)  
Ulica grada Vukovara 284  
10000 Zagreb, Croatia  
Mr Tomislav Petric, Director  
Phone: +385 1 6042 400  
Fax: +385 1 6042 598  
E-mail: [procurement@safu.hr](mailto:procurement@safu.hr)

Twining Administrative Office  
Central Finance and Contracting Agency  
Ulica grada Vukovara 284  
10000 Zagreb, Croatia  
Ms Nirvana Sokolovski, Twining NCP  
Phone: +385 1 6042 400  
Fax: + 385 1 6042 598  
E-mail: [twining@safu.hr](mailto:twining@safu.hr)

### 6.2 Main counterpart in the BC:

Senior Program Officer (SPO)  
Mr Krešimir Perović, Acting Head of Independent Sector for Schengen Coordination and European Union Projects  
Ministry of Interior  
Ulica grada Vukovara 33  
10000 Zagreb, Croatia  
Phone: +385 1 61 22 561

Fax: +385 1 61 22 461  
E-mail: kperovic@mup.hr

BC Project leader:

Mr Dražen Mayka, Assistant Director of FSC “Ivan Vučetić”  
Ministry of Interior  
Ilica 335  
10000 Zagreb, Croatia

### 6.3 Contracts:

It is envisaged that the Project will be implemented through one Twinning light contract, with the maximum amount of 150.000,00 EUR.

### 6.4 Reporting:

The Start-up Report will cover first two months of the contract and will be submitted during the third month.

The Start-up report should:

- Clearly define the aims and purpose of the aid provided by the project,
- Give detailed description of the content of particular parts of the project,
- Work out in detail the activities carried out and the results achieved,
- Work out in detail all modifications agreed with the beneficiary institution,
- Review difficulties met during the implementation of the project and measures that were undertaken for their removal,
- Provide all findings obtained in the meanwhile and preliminary conclusions, and
- Contain a general plan of activities for the implementation of the remained duration of the project.

The Final Report shall be submitted within three months upon the completion of the project activities and in any case within the legal duration of the project, and it should contain the following:

- Complete review of all activities carried out by MS experts during the implementation of the project,
- Achieved progress concerning each activity,
- Summary of all project results, with particular emphasis on mandatory results,
- Estimation of the project impact compared with the project aims and measures of the achieved progress,
- Identification of all important problems met during the implementation of the contract and solutions that have been applied,
- Lessons drawn from the project, and
- Recommendations for further steps in future projects.

The reports must be endorsed and countersigned by the beneficiary, who may make additional comments.

Reports shall be submitted to the Ministry of the Interior, the Central Finance and Contracting Agency, the Ministry of Regional Development and EU Funds and the

concerned service of the European Commission in a form of 3 hard copies and an electronic version. All reports should be written in English.

#### 6.5 Language:

Working language of the project will be English.

### 7. Implementation Schedule (indicative)

7.1 Launching of the call for proposals: 3Q 2016

7.2 Start of project activities: 4Q 2016

7.3 Project completion: 2Q 2017

7.4 Duration of the execution period (number of months): 9 months; the execution period will end 3 months after the implementation period of the Action (work plan) which will take 6 months.

### 8. Sustainability

The MoI shall provide support for effective project implementation which will guarantee the adequate sustainability of project results.

Twinning light project is designed to provide all necessary preconditions to implement advanced biostatistics for DNA mixtures and familial/relatives search in forensic routine casework. Procedures, training manuals and trainings on existing equipment and increased capacities of forensic DNA experts will be a permanent asset to routine forensic casework even after the end of the Twinning light project implementation.

In the long term, the project will have positive impacts, better understanding of forensic results in the court and, consequently better cooperation between police and judiciary.

### 9. Crosscutting issues

Based on the fundamental principles of promoting equality and combating discrimination, as provided in Croatia's legislation and practice, participation in the project will be guaranteed on the basis of equal access regardless of sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

### 10. Conditionality and sequencing

Not applicable.

## ANNEXES TO PROJECT FICHE

1. Logical framework matrix in standard format
2. Organizational structure of the Ministry of Interior and FSC "Ivan Vučetić"

## Annex 1. Logical framework matrix in standard format

<b>Advanced biostatistics in routine forensic DNA casework (CRO STAT)</b>		Programme name and number: Transition Facility IPA/2013/24986 (Annex of C(2013) 8057 final); Institution Building Envelope	
FSC “Ivan Vučetić” at General Police Directorate, Ministry of Interior, Croatia		Contracting period expires: 3 years from the day on which the Commission notifies the Republic of Croatia that all of its internal procedures necessary for the adoption of this Decision have been fulfilled	Disbursement period expires: 4 years following the expiration of the contracting deadline
		Total budget: 150.000 EUR	Transition Facility financing: 135.000,00 EUR (90%) National co-financing: 15.000,00 EUR (10%) <sup>3</sup>
<b>Overall objective</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources of Verification</b>	
The overall objective is to enhance the capacities of the Ministry of Interior (MoI) of the Republic of Croatia to effectively combat crime in line with the related European policies and strategies.	<ul style="list-style-type: none"> <li>• Capacities of the Ministry of Interior to effectively combat crime enhanced</li> <li>• Understanding of DNA analysis results enhanced</li> </ul>	Relevant Ministry of Interior reports and statistics Relevant EC reports and statistics	
<b>Project purpose</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources of Verification</b>	<b>Assumptions</b>
The project purpose is to develop procedures for implementing and using of advanced statistical programs for DNA mixtures and familial/relatives search and to train forensic DNA experts in order to upgrade the efficiency of the Forensic	<ul style="list-style-type: none"> <li>• Efficiency of the FSC “Ivan Vučetić” of the MoI to effectively combat crime enhanced</li> <li>• Procedures for the implementation and usage of the advanced statistical programs for DNA mixtures and familial/relatives</li> </ul>	<ul style="list-style-type: none"> <li>• Relevant EC and MoI reports</li> <li>• Twinning project reports</li> <li>• Standard Operation Procedures</li> <li>• Presentations</li> <li>• TNA report</li> <li>• Training programme</li> </ul>	<ul style="list-style-type: none"> <li>• Full commitment and adequate communication and cooperation of all parties involved</li> <li>• Staff of the project beneficiary available for project implementation</li> <li>• Organizational, technical and</li> </ul>

<sup>3</sup>The total amounts of the Transition Facility Contribution and National Co-financing stipulated in the above table represent the total maximum amounts and therefore, they may be reduced at the level of the Twinning light contract, while the relevant ratio (percentages) should be maintained as fixed. The co-financing requirement foreseen under Transition Facility will be considered fulfilled according to the provision of the relevant Financing Decision.

Science Centre (FSC) “Ivan Vučetić” of the MoI and to consequently increase police and judicial cooperation.	<p>search prepared</p> <ul style="list-style-type: none"> <li>• Capacity of forensic DNA experts in the area of advanced biostatistics for DNA mixtures and for familial/relatives search strengthened</li> </ul>	<ul style="list-style-type: none"> <li>• Training materials</li> <li>• List of participants on trainings</li> </ul>	infrastructure capacities necessary for implementation of the project as well as human resources are in place.
<b>Results</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources of Verification</b>	<b>Assumptions</b>
<p>Result 1: Standard Operation Procedures for advanced biostatistics for DNA mixtures prepared</p> <p>Result 2: Standard Operation Procedures for advanced biostatistics for familial/relatives search prepared</p> <p>Result 3: Capacity of forensic DNA experts in the area of advanced biostatistics for DNA mixtures strengthened</p> <p>Result 4: Capacity of forensic DNA experts in the area of advanced biostatistics for familial/relatives search strengthened</p>	<ul style="list-style-type: none"> <li>• Based on analysis of the FSC work processes related to advanced biostatistics for DNA mixtures and round-table discussions with at least 5 participants, the Standard Operation Procedures for advanced biostatistics for DNA mixtures prepared</li> <li>• Based on analysis of the FSC work processes related to advanced biostatistics for familial/relatives search and round-table discussions with at least 5 participants, the Standard Operation Procedures for advanced biostatistics for familial/relatives search prepared</li> <li>• Training needs analysis (TNA) of forensic DNA experts related to biostatistics for DNA mixtures conducted and TNA report prepared</li> <li>• Long-term training programme and training manual for advanced biostatistics for DNA mixtures prepared</li> <li>• At least 2 workshops for at least 10 forensic DNA experts in total related to advanced biostatistics for DNA mixtures organized and conducted</li> <li>• Training needs analysis (TNA) of forensic DNA experts related to advanced biostatistics for familial/relatives search conducted and TNA report prepared</li> </ul>	<ul style="list-style-type: none"> <li>• Relevant EC and MoI reports</li> <li>• Twinning project reports</li> <li>• Standard Operation Procedures</li> <li>• Presentations</li> <li>• TNA report</li> <li>• Training programme</li> <li>• Training materials</li> <li>• List of participants on trainings</li> </ul>	<ul style="list-style-type: none"> <li>• Full commitment and adequate communication and cooperation of all parties involved</li> <li>• Staff of the project beneficiary available for project implementation</li> <li>• Organizational, technical and infrastructure capacities necessary for implementation of the project as well as human resources are in place.</li> </ul>

	<ul style="list-style-type: none"> <li>• Long-term training programme and training manual of advanced biostatistics for familial/relatives search prepared</li> <li>• At least 2 workshops for at least 10 forensic DNA experts in total related to advanced biostatistics for familial/relatives search organized and conducted</li> </ul>		
<b>Activities</b>	<b>Means</b>	<b>Specification of costs</b>	<b>Assumptions</b>
Activities to be implemented correspond to the activities developed in the selected MS proposal.	Consultation, analysis, preparation of documentation, consulting, round table discussion, training, workshops.	Twinning light project: 150.000,00 EUR	In line with the assumptions specified for results.
			Preconditions: n/a

**Annex 2. Organizational structure of the Ministry of the Interior and FSC “Ivan Vučetić”**



