D2.2 SHUTTLE Procurement Documents

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Associated Materials	

Executive Summary

KEMEA has prepared a draft version of all the necessary documents for the Call for Tenders which are required to execute the PCP procurement.

This documentation will be the reference and legal binding documents for the PCP Phases.

European Commission will be informed 30 days prior to the expected date of publication of the PCP contract notice and its content.

This document along with the Contract Notice of the SHUTTLE project are planned to be released on the 20th of September 2019.

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Contributing Partners as defined in Description of Action (DoA)	Brief Description of Contribution to the Deliverable
KEMEA	Prepared the procurement documents and wrote the deliverable

Document History

Release	Date	Reason for change	Status	Distribution
R0.1	29/05/2019	First submitted draft	DRAFT	Consortium
R0.2	07/06/2019	Updated draft	DRAFT	Consortium & EC
R0.3	4/7/2019	Updated draft	DRAFT	Consortium
R1.0	31/7/2019	Final version of the document addressing also the discussion of the review meeting held on 3 rd June '19	DELIVERED	EC
R1.1	4/9/2019	Reviewed Document	DELIVERED	EC
R1.2	20/9/2019	Final version	DELIVERED	Consortium & EC

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1 Purpose of this document

The aim of this deliverable is to present the Request for Tenders documentation for the SHUTTLE project that will be used as the official and bidding document.

Regarding the submission of a Tender made by a contractor in response to an invitation to tender there are some documents that have to be prepared to seek offers. These documents, necessary for the Call for Tenders, named as Tender documents are required to execute the PCP and include among others: Contract notice, Terms of Reference Documents, Technical specifications and requirements, selection, exclusion and award criteria as well.

The documentation is included in section 2 of the present document and the final version will be released the 20th of September 2019.

2 Procurement Documents



SCIENTIFIC HIGH-THROUGHPUT AND UNIFIED TOOLKIT FOR TRACE ANALYSIS BY FORENSIC LABORATORIES IN EUROPE

SHUTTLE

TENDER DOCUMENTATION

I. CONTRACT NOTICE

LANGUAGE:	EN	
CATEGORY:	ORIG	
FORM:	F02	
VERSION:	R2.0.9.S03	
SENDER:	ENOTICES	
CUSTOMER:	ECAS_nmipante	
NO_DOC_EXT:	2019-XXXXXX	
SOFTWARE VERSION:	9.11.2	
ORGANISATION:	ENOTICES	
COUNTRY:	EU	
PHONE:	V	
E-mail:	p.michalis@kemea-research.gr	
NOTIFICATION TECHNICAL:	V	
NOTIFICATION PUBLICATION:	/	

Contract notice

Services

Legal Basis:

Directive 2014/24/EU

Section I: Contracting authority

I.1) Name and addresses

Center for Security Studies (KEMEA)

4, P. Kanellopoulou Str.

Athens 10177 Greece

Contact person: Maria Kampa

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: EL Internet address(es):

Main address: www.kemea.gr/en

Address of the buyer profile: http://www.shuttle-pcp.eu/

I.1) Name and addresses

MINISTERE DE L'INTERIEUR (MININT)

Place Beauvau Paris

75800 France

Contact person: Gregory Briche

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: FR Internet address(es):

Main address: https://www.gendarmerie.interieur.gouv.fr/pjgn/IRCGN

I.1) Name and addresses

Netherlands Forensic Institute (NFI)

Laan van Ypenburg 6

Hague 2490 AA Netherlands

Contact person: Linda Alewijnse

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: NL Internet address(es):

Main address: https://www.forensicinstitute.nl/

1.1) Name and addresses

Lietuvos Teismo Ekspertizes Centras (LTEC)

Lvovo Gatve 19a

Vilnius

09313

Lithuania

Contact person: Vytautas Jonaitis

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: LT Internet address(es):

Main address: http://www.ltec.lt/

I.1) Name and addresses

Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory

Novo Edíficio Sede, R. Gomes Freire

Lisboa 1169-007 Portugal

Contact person: Ana Cristina Assis

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: PT Internet address(es):

Main address: https://justica.gov.pt/

I.1) Name and addresses

Ministry of Public Security - Israel National Police (MOPS-INP)

Ba'Alei hamelacha 41

Ramle 72558 Israel

Contact person: Chad Leibner

E-mail: shuttle-procurement@kemea-research.gr

NUTS code: EL Internet address(es):

Main address: https://www.gov.il/he/Departments/israel_police

1.2) Information about joint procurement

The contract involves joint procurement

In the case of joint procurement involving different countries, state applicable national procurement law: KEMEA is appointed as the lead procurer on behalf of the group of procurers listed in 1.1 above. The applicable national procurement law is Greek.

1.3) Communication

The procurement documents are available for unrestricted and full direct access, free of charge, at: http://www.shuttle-pcp.eu/

Additional information can be obtained from the abovementioned address

Tenders or requests to participate must be submitted to the following address:

Center for Security Studies (KEMEA)

4, P. Kanellopoulou Str.

Athens 10177 Greece

Contact person: Maria Kampa

Telephone: +30 2107710805/393

E-mail: shuttle-procurement@kemea-reserch.gr

Fax: +30 2111004499 NUTS code: EL Internet address(es):

Main address: http://www.shuttle-pcp.eu/

1.4) Type of the contracting authority

Body governed by public law

1.5) Main activity

Other activity: National Research Agency on Homeland Security

Section II: Object

II.1) Scope of the procurement

II.1.1) Title:

Scientific High-throughput and Unified Toolkit for Trace analysis by forensic Laboratories in Europe (SHUTTLE) Pre-Commercial Procurement

II.1.2) Main CPV code

73100000

II.1.3) Type of contract

Services

II.1.4) Short description:

This contract notice invites interested operators to submit tenders to the procurement.

This PCP aims to trigger new solutions to be developed and tested to address the following challenge: PCP for innovation activity to design and build a cost-effective, open machine integrating a rich toolkit for automated trace evidence analysis which will provide scientific evidence in a high-throughput manner; this machine and toolkit will be used in a unified way, so that cross-border and cross-laboratory collaboration will be improved and methodology and Quality Assurance accreditation in different laboratories will be homogenised.

II.1.5) Estimated total value

Value excluding VAT: 5 967 000.00 EUR

II.1.6) Information about lots

This contract is divided into lots: no

II.2) Description

II.2.1) Title:

II.2.2) Additional CPV code(s)

48983000

II.2.3) Place of performance

NUTS code: EL

Main site or place of performance:

At least 50% of the contracted R&D services in EU Member States or Horizon 2020 associated countries. See RFT (section 3.4) for full details.

II.2.4) Description of the procurement:

The procurement will take the form of a pre-commercial procurement (PCP) under which R&D service contracts will be awarded to a number of R&D providers in parallel in a phased approach. Specific requirements for

innovation procurement (PCP/PPI) supported by Horizon 2020 grants apply. The PCP will be implemented by means of a framework agreement with specific contracts for each of the 3 R&D phases. The three phases are:

- 1. R&D up to solution design (6 months)
- 2. R&D up to prototype development (9 months)
- 3. R&D up to original development ,validation and testing of a limited set of first products (6 months). After each phase, intermediate evaluations will be carried out to progressively select the best of the competing solutions. The contractors with the best-value-for-money solutions will be offered a specific contract for the next phase. The procurement procedure is expected to start by September 2019 and end by October 2021. The selected operators will retain ownership of the Intellectual Property Rights (IPRs) that they will generate during the PCP and will be able to use them to exploit the full market potential of the developed solutions (i.e beyond the procurers).

II.2.5) Award criteria

Price is not the only award criterion and all criteria are stated only in the procurement documents

II.2.6) Estimated value

II.2.7) Duration of the contract, framework agreement or dynamic purchasing system

Start: 30/01/2020

End: 31/10/2021

This contract is subject to renewal: no

II.2.10) Information about variants

Variants will be accepted: no

II.2.11) Information about options

Options: no

II.2.12) Information about electronic catalogues

II.2.13) Information about European Union funds

The procurement is related to a project and/or programme financed by European Union funds: yes Identification of the project:

This procurement receives funding from the European Union's Horizon 2020 Research and Innovation Programme, under grant agreement No 786913 (see https://www.shuttle-pcp.eu/project-at-a-glance/fact-sheet/) The EU has given a grant for this procurement, but is not participating as a contracting authority in the procurement.

II.2.14) Additional information

Participation in the Open Market Consultation that was held as part of the preparation for this procurement is not a prerequisite for submitting a tender.

This PCP is exempted from the EU public procurement directives and the national laws that implement them. KEMEA is acting as the Contracting Authority on behalf of the SHUTTLE Buyers' Group.

Section III: Legal, economic, financial and technical information

III.1) Conditions for participation

III.1.1) Suitability to pursue the professional activity, including requirements relating to enrolment on professional or trade registers

III.1.2) Economic and financial standing

List and brief description of selection criteria:

The selection criteria are as follows:

Ability to perform R&D.

- 2. Demonstration of expertise and working experience required.
- 3. Ability to commercially exploit the results.

See RFT for full details.

III.1.3) Technical and professional ability

List and brief description of selection criteria:

The selection criteria are as follows:

- 1. Ability to perform R&D.
- 2. Demonstration of expertise and working experience required.
- 3. Ability to commercially exploit the results.

See RFT for full details.

III.1.5) Information about reserved contracts

- III.2) Conditions related to the contract
- III.2.1) Information about a particular profession
- III.2.2) Contract performance conditions:

III.2.3) Information about staff responsible for the performance of the contract

Obligation to indicate the names and professional qualifications of the staff assigned to performing the contract

Section IV: Procedure

- IV.1) Description
- IV.1.1) Type of procedure

Open procedure

IV.1.3) Information about a framework agreement or a dynamic purchasing system

The procurement involves the establishment of a framework agreement

Framework agreement with several operators

- $\left(\text{V}.1.4 \right)$ Information about reduction of the number of solutions or tenders during negotiation or dialogue
- IV.1.6) Information about electronic auction

IV.1.8) Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: no

- IV.2) Administrative information
- IV.2.1) Previous publication concerning this procedure

Notice number in the OJ S: 2018/S 231-527873

IV.2.2) Time limit for receipt of tenders or requests to participate

Date: 20/11/2019 Local time: 12:00

IV.2.3) Estimated date of dispatch of invitations to tender or to participate to selected candidates

IV.2.4) Languages in which tenders or requests to participate may be submitted:

English

IV.2.6) Minimum time frame during which the tenderer must maintain the tender

Tender must be valid until: 20/05/2020

IV.2.7) Conditions for opening of tenders

Date: 25/11/2019 Local time: 16:00

Place:

As per the address for the Contracting Authority above.

Section VI: Complementary information

VI.1) Information about recurrence

This is a recurrent procurement: no

- VI.2) Information about electronic workflows
- VI.3) Additional information:
- VI.4) Procedures for review
- VI.4.1) Review body

SHUTTLE Contracting Board

Athens 10177 Greece

Telephone: +30 2107710805 Fax: +30 2111004499

Internet address: https://www.shuttle-pcp.eu/

VI.4.2) Body responsible for mediation procedures

VI.4.3) Review procedure

Precise information on deadline(s) for review procedures:

The procurement is exempted from the EU public procurement directives (including the EU procurement remedies Directives 89/665/EEC and 92/13/EEC) and the national laws that implement them.

All possible complaints during the tendering process will be submitted to the Technical Board (TB). The TB is responsible to evaluate the complaints and to submit its opinion to the Contracting Board (CB) for final decision. The complaints will be submitted within 10 days following the notification of the final decision of the CB. Any dispute or claim arising in connection with the execution of the contracts shall be heard by the Greek courts. Submission of complaints shall not lead to unreasonable delays in the evaluation and award procedures.

VI.4.4) Service from which information about the review procedure may be obtained

Center for Security Studies

Athens 10177 Greece

Telephone: +30 2107710805

E-mail: shuttle-procurement@kemea-research.gr

Fax: +30 2111004499

Internet address: www.kemea.gr/en

VI.5) Date of dispatch of this notice:

II. PCP REQUEST FOR TENDERS

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SECTION 6	CONDITIONS OF CONTRACTS
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Annex B	Subcontracting Statement/ Consortia Statement
Annex C	Legal Capacity of the Bidder Statement
Annex D	Framework agreement
Annex E	PCP Specific contract for phase [1][2][3]
Annex F	Technical Offer
Annex G	Financial Offer and Cost Breakdown
Annex H	Background IPRs
Annex I	End of Phase Report
Annex J	Contractor details & project abstracts
Annex K	Use Cases
Annex L	Specifications

SECTION 1: THE PCP PROCEDURE

1.1 Introduction

The Contracting Authority invites Tenders to submit offers for the provision of R&D Services for the Project.

This PCP Competition will be conducted in accordance with the procedure explained in section 2.2 below.

The budget for the PCP Competition amounts 5,967,741.94 €. Please see section 2.8 below.

Tenderers should aim at a market introduction of their new solution at a maximum of four (4) years after the end of the PCP.

When tendering for this PCP, it should be considered that the tendered Price should reflect the fact that the Intellectual Property Rights (IPR) stay with the Contractor.

While every effort has been made to provide comprehensive and accurate information in all notices and documents prepared for the purposes of this PCP, the Contracting Authority does not accept any liability or provide any expressed or implied warranty in respect of any such information. Tenderers must form their own conclusions about the solution needed to meet the requirements set out in the Tender Documents and may wish to consult their legal advisers.

The Contracting Authority does not bind itself to accept the lowest priced or any Tender. The evaluation process is described in detail under section 3 of the present document.

The Call for Tenders does not constitute an offer or commitment to enter into a Framework Agreement.

No contractual rights in relation to the Contracting Authority will exist unless and until a formal written Framework Agreement has been executed by the Contracting Authority.

Any notification of a successful Contractor status by the Contracting Authority shall not give rise to any enforceable rights by the Contractor.

The Contracting Authority may cancel this PCP Competition at any time prior to a formal written Framework Agreement and Specific Contract being executed by the Contracting Authority.

The Call for Tenders supersedes and replaces any and all previous documentation, communications and correspondence between the Contracting Authority (in its own name and on behalf of the Group of Procurers) and Tenderers, and Tenderers should place no reliance on such previous documentation and correspondence.

This PCP is an open tendering procedure and participation is on equal terms to all types of operators from the countries provided under section 3.1 of the present document (Eligible tenderers, joint tenders and subcontracting) regardless of their size or governance structure. There will, however, be a requirement relating to the place of performance of the R&D Services.

For Phases 2 and 3, participation is limited to Contractors that successfully completed the preceding Phase.

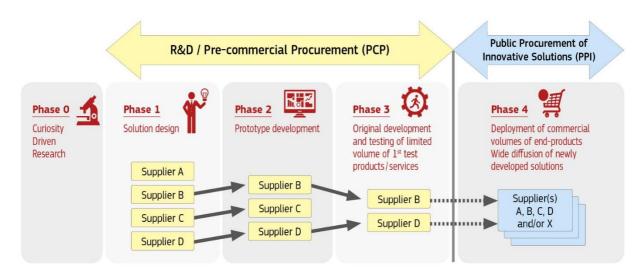
Tenders may be submitted by a single entity or in collaboration with others. The latter approach can involve either submitting a Joint Tender or Subcontracting, or a combination of the two approaches.

Participation in the Open Market Consultation is not a condition for submitting a Tender.

1.2 General context & background

This procurement is a **pre-commercial procurement (PCP)**.

PCP means that public procurers challenge innovative players on the market, via an open, transparent and competitive process, to develop new solutions for a technologically demanding mid- to long-term challenge that is in the public interest and requires new R&D services.



PCP is characterised by the following four **features**:

x Competitive development in phases to identify the solutions offering the best value for money

PCP targets situations that require radical innovation or R&D and for which there are typically no solutions on or close to the market yet. Different competing providers may have different ideas for solutions to the problem. As R&D is yet to

take place, there is not yet any proof as to which of these potential alternative solutions would best meet customers' needs.

PCP therefore awards R&D contracts to a number of competing contractors at the same time, in order to compare different approaches to solving the problem. It thus offers innovators an opportunity to show how well their solution compares with others. It also allows a first customer test reference to be obtained from countries of the procurers that will test the solutions.

The R&D is split into **3 phases** (1.solution design, 2.prototyping, 3. original development and testing of a limited set of 'first' products or services). Evaluations after each phase progressively identify the solutions that offer the best value for money and meet the customers' needs. This phased approach allows successful contractors to improve their offers for the next phase based on lessons learnt and feedback from procurers in the previous phase. Using a phased approach with gradually growing contract sizes per phase also makes it easier for smaller companies to participate in the PCP and enables SMEs to grow their business step-by-step with each phase.

Depending on the outcome of the PCP, procurers may or may not decide to followup the PCP with a public procurement to deploy the innovative solutions (PPI).

× Public procurement of R&D services

PCP addresses mid- to long-term public procurement needs for which either no commercially stable solutions yet exist on the market, or existing solutions exhibit structural shortcomings that it requires further R&D to resolve. PCP is a way for procurers to trigger the market to develop new solutions that address these shortcomings. PCP focuses on specific identified needs and provides customer feedback to businesses from the early stages of R&D. This improves the likelihood of commercial exploitation of the newly developed solutions.

PCP is explained in the PCP communication COM/2007/799 and the associated staff working document SEC/2007/1668. The R&D services can cover research and development activities ranging from solution exploration and design, to prototyping, right through to the original development of a limited set of 'first' products or services in the form of a test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and demonstrate that the product or service is suitable for production or supply in quantity to acceptable high quality standards. R&D does not include quantity production or supply to establish the commercial viability or to recover R&D costs.¹ It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products,

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See also Article XV(1)(e) WTO GPA 1994 and the Article XIII(1)(f) of the revised WTO GPA 2014.

services, production lines, processes or other operations in progress, even if such changes may constitute improvements.

x <u>Open, transparent, non-discriminatory approach — No large-scale deployments</u>

PCP is open to all operators on equal terms, regardless of the size, geographical location or governance structure. There is, however, a place of performance requirement that they must perform a predefined minimum percentage of the contracted R&D services in EU Member States or Horizon 2020 associated countries².

Any subsequent public procurement of innovative solutions (PPI), for the supply of commercial volumes of the solutions, will be carried out under a separate procurement procedure. Providers that did not take part in this PCP (or were not chosen to go through as far as the last phase) will thus still be able to compete on an equal basis in any subsequent procurement looking for contractors to provide a solution on a commercial scale.

x Sharing of IPR-related risks and benefits under market conditions

PCP procures R&D services at market price, thus providing contractors with a transparent, competitive and reliable source of financing for the early stages of their research and development. Giving each contractor the ownership of the IPRs attached to the results it generates during the PCP means that they can widely exploit the newly developed solutions commercially. In return, the tendered price must contain a financial compensation for keeping the IPR ownership compared to the case where the IPRs would be transferred to the procurers (the tendered price must be the 'non-exclusive development price'). Moreover, the procurers must receive rights to use the R&D results for internal use and licensing rights subject to certain conditions.

- ① For more information, see PCP on the <u>Europa website</u>.
- **x** Exemption from EU public procurement directives, the WTO Government Procurement Agreement (GPA) and EU state aid rules

PCP procurements are exempted from the **EU public procurement directives** because the procurers do not retain all the benefits of the R&D (the IPR ownership stays with the contractors).³

They are also exempted from the **WTO Government Procurement Agreement** (**GPA**) because this Agreement does not cover R&D services⁴ (the PCP being

See below 3.4 C.

See Article 16(f) of Directive 2004/18/EC (Article 14 of Directive 2014/24/EU), Article 24(e) of Directive 2004/17/EC (Article 32 of Directive 2014/25/EU) and Article 13(f)(j) of Directive 2009/81/EC.

⁴ See the EU's Annex IV of Appendix I to the WTO GPA.

limited to such services — and any subsequent PPI procurements relating to commercial-scale supply of such solutions not being part of the PCP procurement).

PCP procurements do not constitute state aid under the **EU state aid rules**⁵ if they are implemented as defined in the PCP communication⁶, namely by following an open, transparent, competitive procedure with risk- and benefit-sharing at market price. (The division of all rights and obligations (including IPRs) and the selection and award criteria for all phases must be published at the outset; the PCP must be limited to R&D services and clearly separated from any potential follow-up PPI procurements; PCP contractors may not be given any preferential treatment in a subsequent procurement for provision of the final products or services on a commercial scale.)

× Open market consultation

The start of this PCP procurement was preceded by an open market consultation (see summary and Q&A on https://www.shuttle-pcp.eu/shuttle-open-market-consultation-infoday/).

x EU funding

This PCP procurement is part of a project that is funded by the European Union's Horizon 2020 Research and Innovation Programme, under grant agreement No No 786913. (https://www.shuttle-pcp.eu)

The contracts will therefore be subject to additional rules that come from the EU grant(s).

① For more information, see 'innovation procurement' and 'links to regional policy' in the <u>Participant Portal Online Manual</u>.

Attention: The EU is not participating as a contracting authority in this procurement.

6 Commission Communication: Pre-Commercial Procurement: driving innovation to ensure sustainable, high quality public services (COM(2007) 799) and PCP staff working document (SEC(2007)1668).

See Point 33 of the Commission Communication on a framework for state aid for research and development and innovation (C(2014) 3282).

SECTION 2: TENDER PROFILE

2.1. Description of services to be procured

2.1.1. SHUTTLE PCP Challenge

Within SHUTTLE, a cost-effective, open machine integrating a rich toolkit for automated trace evidence analysis will be designed and built to provide scientific evidence in a high-throughput manner.

This procurement is for R&D services to develop solutions to tackle the following challenge:

Design, build and introduce a cost-effective, open machine, integrating a rich toolkit for automated trace evidence analysis in a unified way, so that cross-border and cross-laboratory collaboration will be improved and methodology and quality assurance accreditation in different laboratories will be harmonised.

2.1.2. SHUTTLE PCP Background

The SHUTTLE Buyers' Group as a whole believes that the traces analysis is an area in which PCP can have significant potential to mitigate the technical and financial barriers that exist and jointly carry out the procurement of the necessary Research and Development (R&D) activities to develop a machine+toolkit that will integrate different tape lifts or other lifting systems analysis tools. The combined use of these will automate the routine part of the work of forensic experts as well as strengthen the evidential value of the findings presented in a Court.

The current process to analyse traces is based on samples comparisons by Microscopists/forensic experts. This activity is crucial, as a 'match' between a trace and a known source normally implies that the expert will conclude that the trace 'might have originated from the known source'. However, microscopic examination following the current procedure has serious limitations:

- The process is relatively inefficient as all traces have to be examined oneby-one.
- The process is selective as a microscopist cannot focus on "everything".
- The process is subjective as current analyses are based on the expert's eyes and experience.

This makes the transfer traces' analysis process work very intensive, time-consuming – hence expensive and subjective. Sharing results between European forensics laboratories is then hardly possible and these limitations restrict the use of trace evidence more and more to severe cases.

For a closer look at the motivation behind this PCP, please see below section 2.1.3.

2.1.3 Motivation for the PCP

SHUTTLE aims to solve two major issues in forensic microtrace evidence investigation. First, current analyses are subjective and require a high level of expertise and training of examiners. SHUTTLE will render analyses more objective and scientific. Second, microtrace evidence analyses are time consuming and hence expensive. This limits the number of cases in which analyses can be carried out.

SHUTTLE will automate a significant part of forensic microtrace evidence examinations. The core of the SHUTTLE toolkit will consist of an automated microscope that will acquire high quality images of recovered microtraces. The acquired images will be processed automatically and an overview of available microtraces will be reported. In first instance, SHUTTLE focuses on Blood, Fibres/Hair, Glass, Saliva, Sand/soil, Skin cells. Algorithms to classify these microtraces will be developed. Additional algorithms can be developed by users or third parties. The additional algorithms can be added as plug-ins for more accurate classification of the aforementioned microtraces or for extension of the range of microtraces that can be classified. The data will be stored in a computer database, thereby facilitating future data analysis, such as provenancing of microtraces and forensic comparisons.

Introduction of the SHUTTLE toolkit will have several advantages for forensic laboratories and the connected entities. The automation will allow a more efficient workflow, while the obtained results will become more objective. The unbiased nature of the analyses and the available database will enable national or even international exchange of data.

Wide implementation of the SHUTTLE toolkit will harmonise the procedures for microtrace evidence examination in laboratories throughout Europe and hence facilitate better international collaboration and exchange of data. Laboratories may decide in the future to use data in a shared database for their data searches, taking into consideration and respecting the relevant legal and ethical requirements. In a similar way, data acquired by several laboratories can be used to calculate background populations and the calculation of the evidential value of the results. They may ask for help from international colleagues by just indicating a reference key under which data is stored in the joint database.

The standardisation of working procedures will form an excellent educational tool, as police officers and forensic experts can improve their knowledge by studying samples in the database. The SHUTTLE toolkit will also form a major incentive for Research and Development studies, e.g. by enabling discrimination and background studies.

All the above will lead to amazing possibilities:

- The quality systems of different countries can be harmonised, using standardised samples and calibration procedures.
- Data acquired by other labs can be searched for matches, which will assist provenance studies.

- Conclusions reported to the Courts can be exposed in a scientifically justified way. Data, acquired in case work, can be used in later R&D studies without additional analyses.
- Traces that are currently investigated by different experts can be classified automatically. This will enhance collaboration between these experts on the initial investigation. The unique possibilities of SHUTTLE to localise different traces will form a valuable tool in the activity level evaluation of evidence.

The table below is summarising the above motivation for the PCP.

	Objective	Challenge	SHUTTLE Breakthrough
Tape lifts	Efficient	Current tapes do not	Provide tape lifts or other lifting systems that
nape lifts preparation Microscopic Instrumentation	recovery of traces on the tapes Automatic analysis of the traces collected on	allow high magnification microscopy. Traces need to be isolated for microscopic investigation. Current analyses are performed by microscopists. They are time consuming,	allow easy recovery, high magnification microscopy. Allow analysing A4-sized (or smaller) tape lifts or other lifting systems. Minimise the risk of loss of information when several forensic teams analyse the same tape lifts or other lifting systems sequentially. Develop instrumentation that provides high quality images of tape lifts or other lifting systems, with different illumination modes.
	the tape	expensive and subjective.	
Image Processing	Convert images to information	Acquired images are large and contain much information. Human evaluation would re-introduce subjectivity	Develop algorithms to search acquired tape lifts or other lifting systems and, as outputs, provide the location and classification of all relevant traces identified on tape lifts or other lifting systems. Allow finding where other traces are located, so that they can be isolated from the tape lifts or other lifting systems and analysed.
Database formation	Store the related results of different samples and different analytical techniques	Required data structure is relatively complex. No agreement between European partners.	Develop suitable database structure. Implement database that can be used by nontechnical users. Include microscopy data in a database and allow performing Provenance studies: if reference materials are added to the database, it will be possible to recognise an item based on a single fibre: 'we have seen this fibre only once before, that was in a sports jacket made by Adidas'.

Pattern	Provide	Develop algorithm	Develop algorithm that can use all database
Recognition	numerical	that can use all	field as either a filter or a discriminating feature.
Procedures	value for	database field as	This will improve conclusion both on source and
	evidential	either a filter or a	activity level. As the microscope will see all
	value of trace	discriminating	fibres (or traces) on the tape lifts or other lifting
	evidence	feature. This will	systems, SHUTTLE will study as well the
		improve conclusion	background population. This is important in the
		both on source and	evaluation of evidence.
		activity level.	

2.1.4. Preparation for the PCP

This PCP takes the form of a Pre-Commercial Procurement (PCP) with the purpose of realising innovative solutions for the implementation of the automated trace analysis and forensics laboratory cooperation across all European countries. This PCP expects important outcomes regarding the availability of technology solutions. Features of expected technology solutions:

- used in each country will be interoperable
- will become more technically mature, catalysed by PCP activity
- will become lowest cost, due to a richer and competitive supplier ecosystem
- will not be locked into individual suppliers
- will provide efficiency gains to forensic laboratories

2.2. SHUTTLE PCP Phase 0- Curiosity Driven Research

PCP Phase 0 (Curiosity driven research) prepared an inventory of forensic technologies already available at TRL 4 or 5, identifying, a subset of technologies that can be brought at TRL 8. Afterwards, the SHUTTLE partners determined the common operational requirements and specifications and plan the research and the design of the prototypes. The Consortium developed an overall and adequate procurement strategy and structure to conduct the procurement activities during the execution of the project and defined the evaluation, validation strategy and assessment of the results achieved by each participating contractor in each PCP Phase. Several "open market consultation" activities were organised in order to widen awareness of the industry regarding the tender to be launched and to collect insights on industry skills which can be used to fine tune the tender specifications. This open market consultation also allowed the SHUTTLE partners to an initial costs analysis and business model. The results of PCP Phase 0 led to the call for tenders.

2.2.1. Open Market Consultation

The objective of the Open Market Consultation (OMC) was to collect the information on what is the state of art keeping in mind that SHUTTLE has to procure innovations to develop and demonstrate TRL8 technologies. The SHUTTLE OMC period started on 30/11/2018 with the publication of the Prior Information

Notice (PIN), including a live streamed two-day event in Paris (30-31/1/2019), one webinar (20/3/19) and a Request for Information (RFI) questionnaire published in the project's website. Altogether, over 85 people participated in the various events. This newly formed community provides a good basis for the promotion of the PCP and has given potential Tenderers a strong understanding of the intentions and needs of the Buyers' Group. The full OMC material is available on the SHUTTLE website: https://www.shuttle-pcp.eu/.

2.3. SHUTTLE PCP Procedure

The PCP shall follow the phased PCP model described by the European Commission in the Communication referred to in the 1.2 section, aiming at conducting R&D services up to the development of a limited volume of first products.

This PCP shall be divided into three Phases. Each Phase will result in a competition between the Tenderers in such a way that the number of Tenderers shall decrease from one Phase to the next one to ensure selecting those that best address the technical challenge on which this PCP is based.

- PCP PHASE 1 SOLUTION DESIGN
- PCP PHASE 2 PROTOTYPE DEVELOPMENT
- PCP PHASE 3 OPERATIONAL VALIDATION

2.4. Expected outcomes (per phase)

Phase 1: Solution Design

During this phase, selected contractors will design and submit for technical evaluation their individual views of the solution that meets SHUTTLE requirements and functional specifications, and will verify the technical, economic and organizational feasibility of their solution approach to address the PCP challenge. The contractors will provide a detailed design of all the components, algorithms and processes of the proposed solution. The works carried out will also encompass the definition of verification procedures for the evaluation of the performance of the defined solutions according to technical parameters, thus leading to an evaluation of the level of compliance of the solutions with respect to the specification from a technical standpoint. A detailed planning for further stages of development will also be requested.

The Technical Board will be responsible in order to achieve effective monitoring. Monitoring meetings can be held physically or online and will be agreed between the Contractor and the Technical Board at least on a monthly basis. So, the technical progress of the Contractors will be monitored through the Solution Design Phase by way of a monthly meeting, which shall commence upon signature of the Contracts. In these meetings the Contractor shall give monthly progress presentations that will be used for reviewing against the expected outcomes (milestones, deliverables and output or results) for the Solution Design Phase. If

there are issues to be discussed or clarified with the Contractors, separate online meetings will be organized, according to the principles of transparency and equal treatment.

For more information on the assessment of the satisfactory completion of the End of Phase Reports, please see section 6.2 Payments based on Satisfactory Completion of Milestones and Deliverables of the Phase.

Phase 2: Prototype Development

Qualified contractors will develop a first prototype based on the design documents delivered in the previous phase and test their solutions in lab conditions (lab of the R&D provider). Prototypes will be tested and verified to provide a measure of the technical performance of each solution in a controlled environment, and their readiness for a pre-operational deployment.

The technical progress of the Contractors will be monitored through the Solution Prototype Phase by way of a monthly presentation from the Contractors which shall commence upon signature of the Contracts (throughout all Phases). The Contractor shall deliver monthly progress presentations that will be used for reviewing against the expected outcomes (milestones, deliverables and output or results) for the Prototype Phase. If there are issues to be discussed or clarified with the Contractors, separate online meetings will be organized, according to the principles of transparency and equal treatment.

The Technical Board will be responsible in order to achieve effective monitoring. Monitoring meetings can be held physically or online and will be agreed between the Contractor and the Technical Board at least on a monthly basis.

Phase's 2 evaluation plan will also include Factory Acceptance Tests (FAT) that will be performed at the contractors' premises. These tests will check if the Toolkit meets each one of the specifications defined in Annex L of this document and that the prototypes reach TRL 6-7. Additional equipment may be required to complete the tests (e.g. renting or buying equipment, materials). In that regard, this should be reflected in the assessment of the financial offer for that phase.

For more information on the assessment of the satisfactory completion of the End of Phase Reports, please see section 6.2 Payments based on Satisfactory Completion of Milestones and Deliverables of the Phase.

Phase 3: Operational Validation

Phase 3 will validate the toolkits that have successfully reached this Phase. Final Solution Acceptance Testing consists of two parts: a) Technical Testing with Site Acceptance Test (SAT) and b) Operational Evaluation by End Users with tests against a set of standard benchmark cases with corresponding samples that will be developed in the beginning of Phase 3. Regarding point b) Indicative Use Cases are included in Annex K. The two final solutions have to be at TRL8 which

represents a 'complete' and fully operational system achieving the best performance possible for all SHUTTLE's Objectives.

The technical progress of the Contractors will be monitored through Phase 3 by way of a monthly presentation from the Contractors that will be used for reviewing against the expected outcomes (milestones, deliverables and output or results) for the Operational Validation. Monitoring activities shall commence upon signature of the Contracts. If there are issues to be discussed or clarified with the Contractors, separate online meetings will be organized, according to the principles of transparency and equal treatment.

The Technical Board will be responsible in order to achieve effective monitoring. Monitoring meetings can be held physically or online and will be agreed between the Contractor and the Technical Board at least on a monthly basis.

All the prototypes and elements of systems issued from the previous phases of the action will be documented and validated using a set of different complementary operational field trials based on benchmark cases reflecting actual multinational and multi stakeholders operations.

For the purpose of the validation by the end users of the two solutions, each Phase 3 contractor shall provide 3 identical toolkits. These toolkits will be installed and remain after the end of the PCP, in the buyers' laboratories in the following way:

Solution A	Solution B
NFI	LPC-PJ
KEMEA	MOPS-INP
LTEC	IRCGN

At the beginning of Phase 3, three months will be dedicated to the development of the required toolkits by each contractor. The evaluation will last 2 months (indicatively starting from M4 until the end of M5 of Phase 3).

Each solution shall be fully operational and shall run during, at least, a two (2)-month period (as a reference, and not at the same time: each site test evaluation shall have its own schedule and shall run for a certain amount of time during that frame). The starting date for the operational validation at each lab shall be established by the Contracting Authority in coordination with the rest of participating authorities. After the first half of the operation time, the Technical Board will review the operation status through a SAT test and intermediate results in order to determine if there are any deviations from the expected deployment. In case the operation runs as expected, the solution will be operated for at least one (1) month without interruption.

The Technical Board will witness and assess the results of this testing and evaluation. They will make a judgement and 'qualify' their decision that TRL8 has been reached.

The Contracting Board in collaboration with the Technical Board will gather and approve Phase 3 results.

The below milestones and deliverables are indicative.

Expected outcomes					
Phase 1: Solution design					
		The R&D providers will have performed research to:			
		-elaborate the solution design and determine the approach to be taken to develop the new solutions and			
	Objective:	-demonstrate the technical, financial and commercial feasibility of the proposed concepts and approach to meet the challenge			
		-obtain a good understanding of the needs of the different systems, to be able to perform field testing activities at each site in phase three			
		- identify any potential ethical consideration with a plan of approach how to address in the next phases and in a future market solution.			
	Output and results:	the solution successfully an	clear and feasible plan on how to develop d formulate a preliminary business plan, meeting the requirements outlined in the		
Milestones		By when?	How?		
M1.1 Kick-off meeting		At the beginning of phase 1	Physical Meeting or Online Meeting Presentation of Phase 1 action plan between TB and contractors and Q&A		
M1.2	Interim-review meeting	At the end of month 3 of phase 1	Video conference / submission of intermediate progress report		
M1.3	Submission of Phase 1 final	One month before the end of phase 1	Submission of reports		

	report		
Deliverables		By when?	How?
D1.1	Contractor details & project abstracts	At the end of month 1 of phase 1	EU template (Annex J)
D1.2	Intermediate progress report	At the end of month 3 of phase 1	Intermediate progress report - Preliminary Concept Design Initial design and basic system architecture Technical confidence that the needed capability can be satisfied within cost and schedule goals
D1.3	End of phase 1 report	At the end of M4 of phase 1	Final report phase 1 including a summary of the main Results achieved, including: -Technical Plan report. Final preliminary design and basic system architecture. Technical confidence that the needed capability can be satisfied within cost and schedule goals -Lists of names and location of personnel that carried out the R&D activities - Business and exploitation plan and - Innovation Impact Plan -Data management plan -Compliance with the ethics requirements -IPRs management plan
D1.4	Report main results and lessons learned for publication (EU	At the end of phase 1	Report EU template main results (Annex I)

template).	

Phase	Phase 2: Prototype Development					
				The R&D providers will have performed:		
	Objective:			-Develop, demonstrate and verify prototypes in contractors' lab conditions		
				-Present advanced plans for conducting field testing (procurers' labs) in phase 3.		
				-Prototypes containing the potential to meet the requirements of PCP challenge.		
Output and results:		-Documentation of the implemented prototype covering actual implementation of the design, prototype testing processes and TRL assessment at this point.				
Miles	tone	S	By when	?	How?	
M2.1		Kick-off meeting	At the phase 1	beginning of	Physical and/or online meeting	
M2.2	M2.2 Interim Demonstration of prototypes to the T.B. in lab conditions At the mid Phase 2		mid of M4 of	Physical meeting – D2.2 submitted Presenting achieved levels of the prototype and demonstration of the results		
M2.3	M2.3 FAT - Demonstration of full working prototype At the begin		ginning of M8 2	Face-to-face presentation and demonstration of working prototype to the buyers group.		
		Submission of	Ab bbs ===1 = 6 MO = 6		Prototype delivery	
M2.4		End of Phase 2 Report	At the end of M8 of Phase 2		Evaluation report per contractor-Update of technical and commercialisation plan.	
Deliverables By when		By when	?	How?		
D2.1	Contractor details & project abstracts At the end of month 1 of phase 2			EU template (Annex J)		

D2.2	Intermediate progress report	At the end of month 5 of phase 2	Intermediate progress report including -the demonstration report presenting achieved levels of the prototype and demonstration of the results		
D2.3	End of phase report	At the end of month 8 of phase 2	Final report phase 2, including: Operational environment – where the tests have been performed, and detailed information which hardware, software and developed tools were used Detailed information regarding testing process team with description of the roles – lists of names and location of personnel that carried out the R&D activities Detailed Technical report for the achievements of Phase 2 FAT results and acceptance tests conducted during the development period. Where is applicable, testing values should be specified as well as the range of values depending on the passing of the test. Updated business and exploitation plan, compliance with the ethics requirements (state of the ethical committee approval), innovation impact and IPR management plan Test plan description of Phase 3 with detailed documentation of the steps that need to be done in order to run the test		
D2.4	Report main results and lessons learned for publication (EU template).	At the end of phase 2	Report EU template main results (Annex I)		
Phase 3: (Operational validat Objective:		velopment of a limited set of first		
	products/solutions (the test series) that are operated and				

			Valida	ated in real-life cottings (field tecting)		
			valida	validated in real-life settings (field-testing).		
			The objective is to provide the Buyers Group with operational solutions having the required capabilities and maturity for the vendor to provide a solution that can work in a real-life environment.			
	Output and results:		the su environ	utput is the operational solution per contractor where uccessful completion of all field-testing in a real lab onment ensures operational requirements compliance. Applete assessment of each operational solution and arison between different solutions.		
Milestone	es	By when	?	How?		
M3.1	M3.1 Start of field beginning of month 4 of phase 3		_	On site		
M3.2	Demonstration to the T.B.(SAT)	At the beginning of month 5 of phase 3		On site		
M3.3	End of field testing	At the end of M5 of phase 3		Written confirmation of trial closure		
M3.4	Submission of End of Phase 3 Report	At the end of phase 3		Submission of reports		
Deliverables		By when?		How?		
D3.1A	Project abstract	At the end of month 1 of phase 3		EU template (Annex J)		
D3.1B	Information obligatory for ethical issues	At the end of month 1 of phase 3		Free format		
D3.2	Intermediate progress reports	At the beginning of month 4 of		Intermediate progress report. -Results regarding the development of the two		
month 4		of	-Results regarding the development of the two			

		phase 3	toolkits.
			 -Updated demonstration plan. Documentation will consist of testing processes, final pilot specification and description of implementation. For each test it has to be delivered: - Detailed testing strategy- name all prerequisites which are necessary for testing and how they will be achieved - Detailed information regarding testing process team with description of the roles - Test plan description with detailed documentation of the steps that need to be done in order to run the test.
D3.3	SAT report	At the end of phase 3	-Results of site acceptance testing - where is applicable, testing values should be specified as well as the range of values depending on the passing of the test.
D3.4	End of Phase Report	At the end of phase 3	 The analysis of the outcomes of the project and results of the physical tests including: 1. Summary of the main results achieved 2. Installation & integration report 3. Traceability Matrix 4. Objective of the demonstrating 5. lists of names and location of personnel that carried out the R&D activities 6. Summary of the features which were demonstrated. 7. Functionality on TRL8 of all demonstrated features -Technical report -SAT Report: Results for each test - where is applicable, testing values should be specified as well as the range of values depending on the passing of the test. - Business and exploitation plan, compliance with the ethics requirements, completion of the innovation impact evaluation form and IPR management Plan
D3.5	User Manual & Training	At the end of phase 3	Manuals delivery & Training report

D3.6 Report main results and lessons learned for publication	of EU Template (Annex I)
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Milestones and Deliverables for the Phases 2 and 3

Any changes will be included in the respective Phase's call-off stage.

A report including the IPR measures taken by the contractor to protect the results and lists of names and location of personnel that carried out the R&D activities should be provided at the end of each phase. At the end of the PCP phase 3, contractors must agree on the text for a summary of overall lessons learnt and results achieved from the PCP, for publication. It should be delivered by Month 21. (October 2021)

2.5 Tender closing time

Tender closing time will be the 20th of November 2019 at 12:00h Athens time.

2.6 Procurer(s) and other parties involved in the PCP

2.6.1. Contracting Authority

This procurement relates to a joint PCP that will be carried out by the following **Contracting Authority**: KENTRO MELETON ASFALEIAS (KEMEA), Greece.

The Contracting Authority is appointed to coordinate and lead the joint PCP, and to sign and award the framework agreement and the specific contracts for all phases of the PCP, in the name and on behalf of the following **buyers' group**:

- -Ministere De L'interieur (MININT), and its two forensic laboratories: Forensic and Criminal Intelligence Agency of the French Gendarmerie (MININT-IRCGN) and Forensic laboratory of the French national police (MININT-INPS), France
- -Netherlands Forensic Institute (NFI), The Netherlands,
- -Lietuvos Teismo Ekspertizes Centras (LTEC), Lithuania,
- -Ministério da Justiça (Polícia Judiciária) Judiciary Police Scientific Police Laboratory (PJ - LPC), Portugal
- -Ministry Of Public Security Israel National Police (MOPS INP), Israel.

The Contracting Authority is part of the buyers' group.

2.6.2. Buyers' Group

The procurers in the buyers group have the following background and profile:

1. The Centre for Security Studies, Ministry of Citizen Protection (KEMEA) is a think tank on homeland security policies and an established research centre since 2005 (L. 3387/2005) within the Hellenic Ministry of Citizen Protection, aiming to support security policy implementation in Greece at a strategic and national level. More specifically, the activity of KEMEA includes Research and Development in the context of National and European projects and in close cooperation with Hellenic Police, working under the auspice of the Ministry of Citizen Protection and Training of the practitioners in new systems and technologies. KEMEA also provides advisory and consulting services to the Ministry of Citizen Protection as well as to other Public and Private authorities on safety and security issues.

A main objective of KEMEA is to bring together all national Law Enforcement Agencies (LEAs) and Border Guard Authorities (Police, Fire Service, Coast Guard, Civil Protection Agency, etc.) and to enable them to collaborate and interconnect with corresponding agencies, research institutions and the industry from Europe. This dedicated approach to exploring synergies, establishing communication links and working together to produce end user driven research on all fronts of the Security Sector during the last decade, has earned KEMEA its participation in numerous National and EC R&D projects. In these projects, in 2015, KEMEA has carried out a comprehensive study called "Hellenic Integrated Border Security and Surveillance Systems for Sea and Land Borders", which included requirements for the concept of operation, suggested areas of monitoring and finally technical requirements and associated metrics for the competitive procurement process. Additionally, in 2011, KEMEA completed a comprehensive study for the development of the National Command Centre (NCC) in Greece in the framework of the EUROSUR regulation. KEMEA was responsible for the procurement of cutting-edge technological equipment for the Hellenic Police which significantly improved the existing capabilities of its CBRN laboratory, DNA analysis subdivision and Ballistics analysis laboratory of the Criminal Investigation Division. Accompanying soft actions, organized by KEMEA, also helped the Hellenic Police achieve compliance with relevant EU directives and promoted collaboration with respective agencies of other EU countries through the transfer of know-how and common training activities. In addition, KEMEA held international high-level workshops with the participation of political and institutional figures, police officers and expert scientists from around Europe to assist in the networking of the laboratory staff.

2. The MININT-IRCGN is an institute of forensic science. In this place, many departments with different specialties work together to search for scientific truth in the criminal process. The military status of the scientific gendarmes enables them to work in all places and at all times, giving this unit an operational status recognized throughout the world.

The MININT-IRCGN reports to the headquarters of the French Gendarmerie for the following posts:

- carry out, at the request of judicial police officers (OPJ) and magistrates, technical or scientific examinations, as well as at the exclusive request of magistrates. These various activities, carried out in accordance with the rules of criminal procedure, give rise to the drawing up of reports;
- to provide, when necessary (serious crimes or disasters), to the directors of investigations, the necessary support for the operation of technical and scientific sampling or assistance in the identification of victims;
- directly assist in the training of criminal identification technicians and the training of investigators (at all levels);
- to follow, in all fields of forensic science, the research required by the development of techniques of criminal investigation.

In recent years, and increasingly frequent, the Institute, recognized as a centre of excellence, has assisted its experts in numerous administrations and it is involved in various interministerial technical or normative work, notably on cybercrime, Video surveillance, document fraud, improvised explosive devices, protection of fortifications, intervention in contaminated environments, marking products in the context of the protection of property, etc.

The French Forensic Institute of the National Police (Institut national de police scientifique) – MININT-INPS – is part of the French Ministry of Interior. It is a state establishment created by the clause 58 of the law 2001 – 1062 (15 November 2001) on the French interior security, and organised by the decree 2004 – 1211 (9 November 2004). In 2016, INPS employs 815 people (75% of which are scientists). MININT-INPS is specialized in forensic technical and scientific investigations. The establishment consists of a **central coordination unit (Lyon) and five forensic laboratories covering the national territory**, located in Lille, Paris, Lyon, Marseille and Toulouse. The main activities of the laboratories are on-request forensic science analyses for police investigations with associated reporting in court cases (118,000 cases in 2016), the development and/or improvement of methods in the area of ballistics, chemistry, toxicology and biology in collaboration with universities and research institutes (for example, with the French National Centre for Scientific Research, CNRS) and lastly, the training of forensic scientists and police officers.

The laboratories are structured into eight technical departments which offer important skills to legal applicants: ballistics, biology (DNA), documents, illicit drugs, arsons/explosions, toxicology, physics and trace analysis (gunshot residues, glass, paints, etc.). MININT-INPS has also a role of an adviser in needs of police services which allows it to be a bridge between manufacturers and endusers.

INPS is active member of the European Network of Forensic Science Institutes (ENFSI).

- **3.** The **Netherlands Forensic Institute** (NFI) is one of the world's leading forensic laboratories. From its state-of-the-art, purpose-built premises in The Hague, the Netherlands, the NFI provides products and services to a wide range of national and international clients.
- 4. The Forensic Science Centre of Lithuania (LTEC) is a governmental institution, part of law enforcement system, established under Ministry of Justice of the Republic of Lithuania, acting as such since 1958. The main activities of FSCL: performance of forensic examinations ordered by Courts, prosecutors, pre-trial investigators in criminal and civil cases; scientific and methodical activity related to usage of forensic examination; creation of investigative methods and methodologies for forensic examinations; preparation of bills and other legal acts regulating the questions of forensic examination, criminology and usage of special knowledge; education and training of forensic experts and issuance of qualification in different types of forensic examination; collaboration with other Lithuanian and foreign examination institutions and scientific institutions.

LTEC performs **38 types of forensic examination**, including paints, glass, fibres, GSR, plastic and so on. LTEC employs 145 persons, including 109 forensic experts, who are registered in the register of forensic experts of the Republic of Lithuania, maintained by the Ministry of Justice. The activities of LTEC are regulated by Laws – Criminal procedure, Civil procedure codes of the Republic of Lithuania, Law on administrative proceedings of cases of the Republic of Lithuania, Law on forensic examination of the Republic of Lithuania and by lower legal acts such as Constitution of LTEC, certified by the Minister of Justice, Rules on performance of forensic examination in LTEC, certified by the Minister of Justice, etc. Annually experts of LTEC perform about 4300 forensic examinations, participating in approximately 500 court proceedings and other investigative proceedings, execute about 10 scientific researches, give consultations, etc.

LTEC participates in the activities of ENFSI (European Network of Forensic Science Institutions, www.enfsi.org) since 1995 and in the activities of BNFSI (Baltic Network of Forensic Science Institutions) since 2005. LTEC is accredited under ISO 17025 standard.

LTEC is always invested in the technologies which are necessary for aspects of its work. It is well equipped with a wide range of survey equipment: FTIR, Raman, MSP, ESM, XRD, GS-MS, TLC, RI measurement, cross-sections, microscopic investigations, and is accredited by ISO 17025 standard.

5. The Policia Judiciária (PJ) is the Portuguese higher criminal police body, hierarchically organized under the aegis of the Ministry of Justice.

PJ's mission consists in assisting the judicial and prosecuting authorities with investigations, by developing and promoting preventive, detection and investigative actions.

Laboratório de Polícia Cientifica (LPC) – Scientific Police Laboratoryis one of the Polícia Judiciária support units, with the following tasks:

Search, collect, process, record traces and perform skills in the various fields ofchemistry, physics, ballistics, biology, questioned documents, handwriting, fingerprint and toxicology;

Implement new types of expertise and develop the existing;

Disseminate scientific and technical information that is appropriate to approach before new crime scenarios;

Provide technical and scientific advice in the field of their expertise in forensic sciences;

Management system for quality, administrative and technical activities;

Ensure technical and scientific participation of PJ, on forensic sciences, in the different national community and international instances.

6. The Israeli National Police (INP) is under the Ministry of Public Security (MOPS), composed of some 30,000 sworn officers, reinforced by 50,000 volunteers. It is the sole responsible body for policing and law enforcement in Israel. The responsibilities of INP cover all aspects from the local through the national levels. The Israeli National Police is guided by the values and principles of the democratic government of the State of Israel.

The main areas on which the Israeli Police focuses are:

Public Security – The prevention and fight against terrorism, response to calls from citizens, arrangement of security procedures and organisation of volunteers (Civil Guard).

Maintaining Law and Order – Response to calls regarding public disturbances, effective response to demonstrations and unlawful gatherings, licensing – establishment of limits and conditions for businesses, responsibility for detainees and implementation of court orders.

Fighting Crime – Investigation of crimes and apprehension of offenders, detection and exposure of unreported crimes such as drug trafficking, extortion and instructions to the public on how to protect themselves and their property.

Traffic Enforcement – Directing traffic and working to ensure smooth traffic flow, enforcement of traffic laws, investigation of traffic accidents and apprehension of traffic offenders. In addition, instructing the public on traffic

safety and participating in the decision-making process in matters such as the planning and construction of roads, placement of road signs and traffic lights, etc.

Border Security – The Border Police Serves as the operational arm of the Israel National Police. The multi-purpose force deals with challenges relating to public security, terror, severe crime, rioting, guarding sensitive sites and securing rural areas.

2.7 Contracting approach

The PCP will be implemented by means of a framework agreement with call-offs for specific contracts for each of the 3 R&D phases (altogether 'Contracts').

The law governing the Contracts is Greek law, because of the location of the Contracting Authority. There will be no renegotiation. The Framework Agreement will remain binding for the duration of all Phases for which Contractors remain in the PCP.

KEMEA as the Contracting Authority will be required in all Phases for which Contractors remain in the PCP. Tenderers that are awarded a framework agreement will also be awarded a specific contract for phase 1 (evaluation of tenders for the framework agreement and phase 1 are combined). Tenderers are therefore asked not only to submit their detailed offer for phase 1, but also to state their goals, and to outline their plans (including price conditions) for phases 2 and 3 — thus giving specific details of the steps that would lead to commercial exploitation of the R&D results.

Phase 1: Solution Design. Following the tendering stage, a framework agreement and a specific contract for phase 1 will be awarded to a minimum of four (4) contractors.

Phase 2: Solution Prototype. A call-off will be organised for phase 2, with the aim of awarding a minimum of three (3) phase 2 contracts. Only offers from contractors that successfully completed phase 1 will be eligible for phase 2. The procurers will validate the phase 2 prototypes in the contractors' premises.

Phase 3: Operational Validation. A second call-off will be organised for phase 3, with the aim of awarding a minimum of two (2) phase 3 contracts. Only offers from contractors that successfully completed phase 2 will be eligible for phase 3. The procurers will validate the phase 3 prototypes in the their labs. Three prototypes of each solution will be installed in the buyers' laboratories (three labs will get Solution A, the rest three will get Solution B).

Offers for the next phase will be requested together with the end-of phase deliverables of the previous phase. In this case all contractors of the previous phase will be invited to make offers for the next phase, successful completion of the previous phase is evaluated before evaluating the offers for the next phase,

to determine which offers are eligible to proceed to the evaluation of offers for the next phase.

A Contractor must have been awarded a Specific Contract for Phase 1 in order to be considered eligible for Phase 2; a Contractor must have been awarded Specific Contracts for Phases 1 and 2 in order to be considered eligible for Phase 3.

2.8 Total budget and budget distribution (per phase)

The total budget for this PCP is 5,967,741.94 Euros.

The maximum duration per phase, the minimum number of contractors that are expected to be selected per phase, the maximum budget per phase and the maximum budget per bidder (excluding VAT and including other taxes and duties that may be applicable to the supplier) are given in the table below:

SHUTTLE PCP Phases	Minimum Number of contractors expected to be selected	Maximum budget per contractor	Total cost per phase	
PCP Phase 1 (Solution Design)	4	241,935.48€	967,741.94€	
PCP Phase 2 (Prototype Development)	3	806,451.61€	2,419,354.84€	
PCP Phase 3 (Operational validation)	2	1,290,322.58€	2.580.645,16€	

For phases 1 and 2, contracts will be financed until the remaining budget is insufficient to fund the next best tender. The exact number of contracts finally awarded will thus depend on the prices offered and the number of tenders passing the evaluation. As leftover budget from the previous phase will be transferred to the next phase, the total budget available for phases 2 and 3 may eventually be higher than stated here (but the maximum budget per contractor for phases 2 and 3 will remain the same). The lower the average price of tenders, the more contracts can be awarded. However, the total value of the contracts awarded can also be lower than initially expected if there are fewer tenders than expected that meet the minimum evaluation criteria.

Since all Contractors will be paid by the Contracting Authority by way of centralised payments, and as KEMEA is based in Greece , EU rules and the valid Greek VAT legislation will be applied. 7

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 $^{^7}$ See indicatevely, VAT Council Directive 2006/112/EC and Law No 2859/2000 Greek VAT Code. According to the later, the 24% VAT applies.

2.9 Time schedule

General duration of each phase is as follows:

- Phase 1: Solution Design (6 months)
- Phase 2: Prototype Development (9 months)
- Phase 3: Operational Validation (6 months)

The estimated planned schedule for the SHUTTLE PCP is presented in the following time schedule:

Date	Activity
30/11/2018	Publication of prior information notice in TED
20/9/2019	Publication of contract notice in TED
10/10/2019	Deadline for submitting questions about tender documents
20/10/2019	Deadline for Contracting Authority to publish replies to questions (Q&A document)
20/11/2019	Deadline for submission of tenders for the framework agreement and phase 1
25/11/2019	Opening of tenders
16/1/2020	Tenderers notified of decision on awarding contracts
26/1/2020	End of the standstill period
30/1/2020	Signing of framework agreements and phase 1 specific contracts
31/1/2020	Publication of contract award notice in TED
01/2/2020	Start of phase 1 Solutions Design

Names of winning phase 1 contractors and their project abstracts will be sent to the published on the project's website www.shuttle-pcp.eu Deadline for phase 1 interim milestone(s)/interim deliverable(s) Interim payments 1/7/2020 Deadline for phase 1 final milestone(s)/final report/deliverable(s) 19/7/2020 Assessment of phase 1 final milestone(s)/final report/deliverable(s) Phase 1 contractors notified as to whether they have completed this phase satisfications.	
15/5/2020 Interim payments 1/7/2020 Deadline for phase 1 final milestone(s)/final report/deliverable(s) 19/7/2020 Assessment of phase 1 final milestone(s)/final report/deliverable(s) 20/7/2020 Phase 1 contractors notified as to whether they have completed this phase sat successfully	tisfactorily and
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19/7/2020 Assessment of phase 1 final milestone(s)/final report/deliverable(s) 20/7/2020 Phase 1 contractors notified as to whether they have completed this phase sat successfully	itisfactorily and
20/7/2020 Phase 1 contractors notified as to whether they have completed this phase satisfied successfully	itisfactorily and
successfully	itisfactorily and
30/7/2020 End of standstill period	
31/7/2020 End of phase 1 Solutions design	
31/7/2020 Summary of the results and conclusions achieved by each contractor during the photographic EU	ase sent to the
31/7/2020 Payment of balance for phase 1 to contractors that completed this phase satisfactoril	ly
20/5/2020 Launch call-off for phase 2 (only offers from contractors that successfully complete eligible)	ed phase 1 are
25/5/2020 Deadline for submitting questions on phase 2 call-off documents	
1/6/2020 Deadline for Contracting Authority to circulate replies to questions to phase 2 tender	ers
1/7/2020 Deadline for submitting phase 2 offers	
1/7/2020 Opening of phase 2 offers	
20/7/2020 Contractors notified of decision on awarding phase 2 contracts	
30/7/2020 End of standstill period	

Date	Activity
31/7/2020	Signing of phase 2 specific contracts
1/8/2020	Start of phase 2 Prototype Development
1/8/2020	Names of winning phase 2 contractors and their project abstracts will be be sent to the EU and will be published on project's website www.shuttle-pcp.eu
15/12/2020	Deadline for phase 2 interim milestone(s)/deliverable(s)
4/1/2021	Interim payments
15/3/2021	Lab testing of the prototype developed during phase 2
1/4/2021	Deadline for submission of phase 2 final milestone(s)/final report /deliverable(s)
20/4/2021	Assessment of phase 2 final milestone(s)/final report/deliverable(s)
20/4/2021	Phase 2 contractors notified as to whether they have completed this phase satisfactorily and successfully
30/4/2021	End of standstill period
30/4/2021	End of phase 2
30/4/2021	Summary of the results and conclusions achieved by each contractor during the phase sent to the EU
30/4/2021	Payment of balance for phase 2 to contractors that completed this phase satisfactorily
20/2/2021	Launch call-off for phase 3 (only offers from contractors that successfully completed phase 2 are eligible)
25/2/2021	Deadline for submitting questions about phase 3 call-off documents
1/3/2021	Deadline for Contracting Authority to circulate replies to questions to phase 3 tenderers
1/4/2021	Deadline for submitting phase 3 offers

Date	Activity
1/4/2021	Opening of phase 3 offers
20/4/2021	Contractors notified of decision to award phase 3 contracts
30/4/2021	End of standstill period
30/4/2021	Signing of phase 3 specific contracts
3/5/2021	Start of phase 3 Operational Validation
3/5/2021	Names of winning phase 3 contractors and their project abstracts will be be sent to the EU and will be published on project's website www.shuttle-pcp.eu
1/8/2021	Deadline for phase 3 interim milestone(s)/deliverable(s)
14/8/2021	Interim payments
1/10/2021	Deadline for submission of phase 3 final milestone(s)/final report/ deliverable(s)
17/10/2021	Assessment of phase 3 final milestone(s)/final report/deliverable(s)
17/10/2021	Phase 3 contractors notified as to whether they have completed this phase satisfactorily
27/10/2021	End of standstill period
29/10/2021	End of phase 3
29/10/2021	Summary of the results and conclusions achieved by each contractor during the PCP sent to the EU for publication purposes
29/10/2021	Payment of balance for phase 3 to contractors that completed this phase satisfactorily

2.10 IPR issues

2.10.1.Ownership of results (foreground)

Each contractor will keep ownership of the Intellectual Property Rights (IPRs) attached to the results they generate during the PCP implementation. The tendered price is expected to take this into account.

The ownership of the IPRs will be subject to the following:

- the buyers group has the right to:
 - access results, on a royalty-free basis, for their own use
 - grant upon notification of the contractors (or to require the contractors to grant) non-exclusive licences to third parties to exploit the results under fair and reasonable conditions (without the right to sub-license)
- the buyers group has the right to require the contractors to transfer ownership of the IPRs back to the buyers' group if the contractors fail to comply with their obligation to commercially exploit the results (see below) or use the results to the detriment of the public interest (including safety and security interests).

2.10.2. Declaration of pre-existing rights (background)

The ownership of pre-existing rights will remain unchanged.

In order to be able to distinguish clearly between results and pre-existing rights (and to establish which pre-existing rights are held by whom):

- tenderers are requested to list the pre-existing rights for their proposed solution in their offers
- procurers and contractors will be requested to establish a list of pre-existing rights to be used before the start of the contract.

The list of pre-existing rights held by the procurers are presented in Annex H.

2.10.3.Commercial exploitation of results

The market potential of the results is estimated at 71 members in 38 countries according to the members of the ENFSI- this part of the market can be estimated to around 100 forensic laboratories.

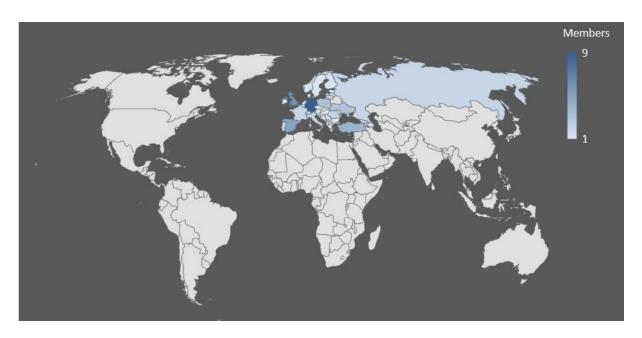


Figure 1 ENFSI Members (http://enfsi.eu/about-enfsi/members/)

Moreover, on the demand side, the targeted market is constituted by the following potential customers:

- Research Institutes in the field of forensic,
- Private companies.

In order to do the necessary estimations to perform the preliminary calculations, the SHUTTLE consortium has defined a standard sample to work with. The sample consists of a virtual tape lifts or other lifting system having a total area equal to the area of an A4 paper, as targeted by the SHUTTLE project.

Based on this virtual tape lifts or other lifting system, the SHUTTLE partners have defined the time needed for the examination methods that each laboratory uses. The sum of the specific times of examination of each microtrace provides an estimation of the necessary time, in hour, to examine the full A4 virtual tape lifts or other lifting systems containing 170 microtraces.

In this estimation, only optical microscopy is included as this is the identified bottle neck regarding the costs and duration of examinations compared to the SHUTTLE Toolkit performance. Other conventional examination methods (GRIM, SEM/EDS, ICPMS, FTIR etc.) are complementary and will continue to be performed in the same way after the use of the SHUTTLE Toolkit, which explains why they are not considered in this estimation.

The example given leads to an average of 39,9 hour of work to perform this analysis.

In order to assess the benefits brought by the SHUTTLE Toolkit, the SHUTTLE partners have then estimated the necessary methods and instruments that they currently use to conduct the examination of the microtraces contained in the A4 virtual sample. They have taken into account the tasks and the instruments that the forensic laboratories are currently using to perform their daily duties. Moreover, into the analysis made they have taken into consideration information regarding the manpower, man hours, analysed traces, costs spent for each of their tasks.

The SHUTTLE partners have made an estimation of the SHUTTLE Toolkit expected performance for the examination of the same A4 virtual tape lifts or other lifting systems containing 170 microtraces. This estimation also describes how this performance will benefit the laboratories. During this estimation, it quickly appeared that each laboratory will get different kind of benefits:

- Laboratories that are less equipped are performing less tasks and that is the reason why they will not consume much time in their examination. Those laboratories will have the benefit of new examination options by using the SHUTTLE Toolkit.
- 2. Other laboratories that are well equipped will have the benefit of consuming less time for the examination of traces, as they can use their conventional instrumentation more effectively, and with the SHUTTLE Toolkit they will be able to collect from crime scene and analyze more traces than before in less time. (The time that they would consume for optical microscopy to examine a limited number of traces, they can use it for examining more traces (collected with the novel tape lifts or other lifting systems and analyzed initially fast by the SHUTTLE Toolkit automatically) with their complementary conventional techniques for better identification and discrimination power).

So, with SHUTTLE, the consortium hopes to reduce the estimated time to perform the tape lifts or other lifting systems examination from 39,9 hours down to 1 hour. This 97% reduction in tape lifts or other lifting systems examination time is a very ambitious but realistic target and would allow to save 38,9 hours of work per tape lifts or other lifting systems examined.

Also, all laboratories estimated that there will be considerable total yearly cost savings, around 140.000 euros, by the usage of the SHUTTLE Toolkit. This savings estimation was based on:

- 1. The workload (number of hours of work) that the forensic analysts reduced due to the use of SHUTTLE.
- 2. The deduction of spare equipement by a forensic laboratory due to the use of the SHUTTLE Toolkit.

The contractors are expected to start commercial exploitation of the results at the latest four years after the end of the framework agreement.

The contractors are required to undertake specific activities beyond product development to commercially exploit the results, by building a concrete exploitation plan, including a commercialization strategy, that should explain the proposed approach to commercially exploit the Results of the PCP in order to bring a viable product to market. Based on the indications for the market as presented in this section, contractors should prepare a detailed market analysis providing a first outlook on the cost/benefit ratio in the transition towards full scale deployment.

The procurers themselves should also plan to help remove barriers to the introduction onto the market of the solutions to be developed during the PCP (e.g. promotion of R&D results among other public procurers, contribution made by the demand side to regulation, standardisation, and certification).

The business plan is expected to take into account the involved stakeholders and value chain. The plan should also list those topics that are very relevant for the commercialisation, but for which no quantitative data are available yet.

Furthermore, a market analysis is meant to give a global qualitative insight in the market potential of the PCP services in both the test regions as well as on a European scale. The market analysis should at least indicate possible first-to-target deployment areas (geographical/services) and possible deployment barriers (e.g. political, technical, organisational, financial, legal, ethical). Feasibility regarding principles for licensing, business models, pricing, and distribution should also be included. Describe the innovation aspects of the proposed solution in respect to the state-of-the-art. This part should focus on the added value of the SHUTTLE solution, compared to the current state-of-the-art on the market services (not compared to solutions still in pilot phases) with respect to:

- Comfort for users and impact on "willingness to pay"
- Cost-benefit ratio for forensic laboratories
- Required public funding

Contractors must consider the future certification of their solutions or contribution to standardisation. The feasibility of the business plan to commercially exploit the R&D results (Technical Offer) will be assessed as part of the Award Criteria. Furthermore, the commercialisation plan will be part of the End-of-Phase reports of all three Phases, as well as of the offers for the Phases 2 and 3. In addition to the commercialisation activities performed by the Contractors, the Buyers Group Members will promote the R&D Results. The Buyers' Group Members will also actively disseminate the Contractors' Results at the end of each Phase via relevant public and industry related activities. It is the the Buyers' Group objective to help develop a working market for such type of solutions in order to ensure their usability and sustainability and to help overcome possible, commonly defined deployment barriers.

SECTION 3: EVALUATION OF TENDERS

3.1 Eligible tenderers, joint tenders and subcontracting

Participation in the tendering procedure is open on equal terms to all types of operators, regardless of their size or governance structure.

Tenders may be submitted by a single entity or in collaboration with others. The latter can involve either submitting a joint tender or subcontracting, or a combination of the 2 approaches.

Concretely:

- -Natural persons residing in one of the following countries:
- EU and EEA (European Economic Area) member states.
- H2020 Associated Countries having signed a Bilateral Agreement with the EU on security procedures for exchanging and protecting classified information
- -Legal entities established under the law of the following countries and having their central administration or principal place of business or registered office (seat) in one of the following countries:
- EU and EEA (European Economic Area) member states.
- H2020 Associated Countries having signed a Bilateral Agreement with the EU on security procedures for exchanging and protecting classified information
- -Groups of economic operators of the above natural persons or legal entities, submit.

Participation in the **open market consultation** is not a condition for submitting a tender.

Attention:

There will, however, be a requirement relating to the place of performance of the R&D services (see below 3.4 C.).

For phases 2 and 3, participation is limited to tenderers that successfully completed the preceding phase.

For the present procurement, the Open Procedure is adopted.

3.1.1.Joint Tenderers-Consortia Tenders

A Consortium (a combination of firms) may submit a Joint Tender. Any type of natural or legal persons (including non-profit entities properly registered like universities) shall be entitled to submit Tenders either individually or by way of an association or consortium comprising several Tenderers set up temporarily for the purposes of this PCP.

For joint tenders:

- The group of tenderers must assume joint and several liability for the performance of the contract.
- The group of tenderers must mandate one of them with the power to sign the framework agreement and specific contracts provide in their name and on their behalf ('Lead Contractor').
- To this single authorised representative (Lead Tenderer) all communications shall be directed and accepted until this Competition has been completed or terminated. Correspondence from any other person or entity will NOT be accepted, acknowledged or responded to.
- Prior to and as a condition of award of the Contracts, the successful Tenderer shall be required to designate a single authorised representative (Lead Contractor), who will carry overall responsibility for the Contracts irrespective of whether or not tasks are to be performed by a Subcontractor (see below) or other consortium member. The Lead Contractor shall sign the Tender and Contracts in the name of and on behalf of all members, and shall be responsible for all aspects and execution of the contracts without prejudice to the existence of joint powers that they may grant for receiving and making payments of a significant amount. All members of the consortium shall be jointly and separately bound to fulfil the terms of the Framework Agreement and Specific Contracts. The Lead Contractor shall be mandated to act on behalf of the consortium for the purposes of the contracts and shall have the authority to bind the consortium.

3.1.2 Subcontracting

Subcontracting refers to any contract or agreement between the Tenderer and a third party, whereby that third party agrees to provide services to the Tenderer to enable or assist the Tenderer to provide the R&D Services or any part thereof to the Contracting Authority.

Subcontracting is permitted in each Phase of this Competition. However, no essential parts of the Contracts can be subcontracted, nor the management of the PCP.

For subcontracting:

- The tender must mention which parts of the contract will be subcontracted
- The contractors remain fully liable to the procurers for the performance of the contract (and that is the reason why subcontracts must reflect the rules of the H2020 grant agreement, including as relates to the place of performance, the definition of R&D services, confidentiality, results and IPRs, the visibility of EU funding, conflicts of interest, language, obligation to provide information and keep records, audits and checks by the EU, the

processing of personal data, liability for damages, ethics and security requirements).

3.2 Exclusion criteria

The exclusion criteria are as follows:

Exclusion criteria	Evidence
A) Conflict of Interest	A) A declaration of honour
B) Bankruptcy & professional misconduct	B) A declaration of honour
C) Criminal offences	C) A Declaration of Honour
D) Proposed solution already available in the market	D) A Declaration of Honour

▲ Tenderers that do not comply with these criteria will be excluded.

A) Conflict of interest

Tenderers that are subject to a conflict of interest may be excluded. If there is a potential conflict of interest, tenderers must immediately notify the Contracting Authority in writing.

A conflict of interest covers both personal and professional conflicts.

Personal conflicts can arise in any situation where the impartial and objective evaluation of tenders and/or implementation of the contract is compromised for reasons relating to economic interests, political or national affinity, family, personal life (e.g. family of emotional ties) or any other shared interest.

Professional conflicts might occur in situations where the contractor's (previous or ongoing) professional activities affect the impartial and objective evaluation of tenders and/or implementation of the contract.

Attention: If an actual or potential conflict of interest arises at a later stage (i.e. during the implementation of the contract), the contractor must contact the Contracting Authority, who is required to notify the EU and take all necessary steps to rectify the situation. The EU may verify the measures taken and require additional information to be provided and/or further measures to be taken.

B) Bankruptcy & professional misconduct

A tenderer or contractor can be excluded from further participation in the PCP if the former or any Sub- Tenderer on whose resources it relies upon in this procurement:

- . Is bankrupt or is being wound up, is under compulsory administration or is the subject of a composition or has indefinitely stopped its payments or is subject to a prohibition on conducting business.
- . Is the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding up or administration by the court or composition or any other similar proceedings.
- . Has been convicted by a judgment which can apply as *res judicata* for an offence relating to professional practice. Has been guilty of grave professional misconduct and the procuring agencies can prove this.
- . Has not fulfilled its obligations relating to social insurance charges or taxation in its own country.
- . Shown significant or persistent deficiencies in the performance of a substantive requirement under a prior public contract, a prior contract with a contracting entity or a prior concession contract which led to early termination of that prior contract, condemned for damages or other comparable sanctions.

Attention: Should there be any doubt as to any of these criteria, tenderers may be requested to provide additional information such as an extract of the local chamber of commerce.

C) Criminal offences

If the Procuring Entity becomes aware that a tenderer, or a representative of the tenderer, or Sub- Tenderer, under a judgment that has entered into final legal force has been sentenced for a criminal offence listed below, such tenderer can be excluded from the PCP. Tenderers must confirm by signing the Declaration of honour in Annex A that they are not subject to any of the criminal offences indicated below:

Participation in a criminal organization; this includes the following conduct: Conduct by any person who, with intent and with knowledge of either the aim and general criminal activity of the organization or the intention of the organization to commit the offences in question, actively takes part in:

 Activities of a criminal organization, which shall be taken to mean a structured association, established over a period of time, of more than two persons, acting in cooperation with a view to committing offences which are punishable by deprivation of liberty or a detention order of a maximum of at least four years or by a more serious penalty, whether such offences are an end in themselves or a means of obtaining material benefits and, where appropriate, of improperly influencing the operation of public authorities, even where that person does not take part in the actual execution of the offences concerned and, subject to the general principles of the criminal law of the Member State concerned, even where the offences concerned are not actually committed;

- The organization's other activities in the further knowledge that its participation will contribute to the achievement of the above-mentioned criminal activities;
- Conduct by any person consisting in an agreement with one or more persons
 that an activity should be pursued which, if carried out, would amount to the
 commission of an offence as mentioned above, even if that person does not
 take part in the actual execution of the activity;
- Corruption; corruption shall be considered as deliberately promising or giving, directly or through an intermediary, an advantage of any kind whatsoever to a public official, for himself or for a third party to act or refrain from acting in accordance with his duty or in the exercise of his functions in breach of his official duties; or in the private sector, directly or through an intermediary, deliberately promising, offering or giving an undue advantage of any kind whatsoever, for himself or for a third party, in the course of business activities of that person in order that the person should perform or refrain from performing an act, in breach of his duties;
- Fraud; fraud meaning both expenditure fraud and revenue fraud. This means any act or deliberate omission involving the use or presentation of false, incorrect or incomplete statements or documents which has as its effect the misappropriation or wrongful retention of funds from, or the illegal diminution of the resources of the general budget of the European Communities or budgets managed by, or on behalf of, the European Communities, non-disclosure of information in violation of a specific obligation, with the same effect, the misapplication if such funds for the purpose other than those for which they were originally granted or the misapplication of a legally obtained benefit with the same effect;
- Money laundering or terroristic financing, which shall be taken to mean:
- o The conversion or transfer of property, knowing that such property is derived from criminal activity or from an act of participation in such activity, for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in the commission of such activity to evade the legal consequences of his actions;
- o The concealment or disguise of the true nature, source, location, disposition, movement, rights with respect to, or ownership of property, knowing that such property is derived from criminal activity or from an act of participation in such activity;

- o The acquisition, possession or use of property, knowing, at the time of receipt, that such property was derived from criminal activity or from an act of participation in such activity;
- o Participation in, association to commit, including attempts to commit, aiding, abetting, facilitating and counselling the commission of any of the actions mentioned in the foregoing three paragraphs;
- Terrorist offences or offences linked to terrorist activities

o Child labour and other forms of trafficking in human beings as defined in Article 2 of Directive 2011/36/EU of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629/JHA.

The exclusion criteria will remain unchanged for the entire duration of the PCP, thus applying also for the call-offs for the Phases 2 and 3.

D) Proposed solution already available in the market

Tenderers whose proposed solution is already available in the market may be excluded.

3.3 Selection criteria

The purpose of the Selection Criteria is to determine whether a Tenderer has the financial, economic, technical and professional capacity necessary to carry out and perform the work.

The selection criteria are as follows:

Selection criteria	Evidence	
Ability to perform R&D up to original development of the first products or services and to commercially exploit the results of the PCP, including intangible results in particular IPRs	Description of the capacity, materials and equipment that are available to the tenderer for research, prototyping and limited production and supply of the first set of products or services	
Demonstration of expertise and working experience required to undertake an innovative R&D project that entails relevant technology	Description of the expertise and working experience required to undertake an innovative R&D project that entails relevant technology	

Ability	to	со	mmer	cially	exploit	the
results	C	of	the	PCP,	inclu	ding
intangible results in particular IPRs						

Decription of the availability of financial and organisational structures for management, exploitation and transfer of IPRs and for generating revenue by marketing commercial applications of the results.

▲ Tenderers that do not comply with these criteria will be excluded.

Ability to perform R&D up to original development of the first products

Tenderers must have:

- the capacity, tools, material and equipment to:
 - o carry out research and lab prototyping
 - produce and supply a limited set of first products or services and demonstrate that these products or services are suitable for production or supply in quantity and to quality standards defined by the procurers.

Demonstration of expertise and working experience are required when undertaking an innovative R&D project that entails relevant technology

Tenderers must:

 Provide a description of relevant reference and /or previous projects (executed during the last 5 years) which reflect the competences and capacity of the Tenderer in the different phases and domains of the SHUTTLE project, such as research, development, prototyping, testing and commercialisation. These references will be based on previous projects of the Tenderers and /or other members of the joint consortia and subcontractors who will be working on the project.

To describe these projects, the Tenderers will provide proof of the capacity, tools, materials and equipment to carry out research and lab prototyping and proof of the capacity to produce and supply a limited set of first products or services. Tenderers will also have to demonstrate that these products or services are suitable for production or supply in quantity and to quality standards defined by the procurers.

In addition, the Tenderes will have to prove that they are able to manage, exploit and transfer or sell the results of the PCP (including tangible and intangible results, such as new product designs and IPRs) and able to generate revenue by marketing commercial applications of the results (directly or through subcontractors or licensees).

Finally, tenderers will have to provide the necessary competences to ensure that they are able to complete this PCP project on time.

- Demonstrate the expertise and working experience required to undertake an innovative R&D project by providing a number of CVs of key personnel and competences, which they consider necessary to complete the project.
- Confirm that their organization has a Business Continuity / Disaster Recovery / Risk Management plan which ensured that the described services will be delivered in the event of a disruption affecting their business and will ensure continuity of supply / service from critical suppliers.
- Confirm that the they will take the appropriate level of insurance cover in case they are successful in winning the contract.

Ability to commercially exploit the results of the PCP, including intangible results in particular IPRs

Tenderers must have:

- the financial and organisational structures to:
 - manage, exploit and transfer or sell the results of the PCP (including tangible and intangible results, such as new product designs and IPRs)
 - generate revenue by marketing commercial applications of the results (directly or through subcontractors or licensees).

Attention: Should there be any doubt as to any of these criteria, tenderers may be requested to provide additional information.

3.4 Award criteria

There are 2 types of award criteria (on/off criteria and weighted criteria).

> On/off award criteria

These are the criteria that can only have value 0 or 1 and the score of the other award criteria must be multiplied by this value (so that the total score becomes 0 if a tender scores 0 on an on-off award criterion).

Tenders must comply with the following on/off award criteria:

On/off award criteria	Evidence

A) Compliance with the definition of R&D services	Declaration of Honour including the evidence required below	
B) Compatibility with other public financing	Declaration of Honour	
C) Compliance with the requirements regarding the place of performance of the contract	Declaration of Honour including the evidence required below	
D) Compliance with ethics requirements	Declaration of Honour	
E) Compliance with security requirements	Declaration of Honour	

⚠ Tenders that do not comply with these criteria will be excluded. The offers for each phase will be evaluated against these criteria.

A) Compliance with the definition of R&D services

Tenders that go beyond the provision of R&D services will be excluded.

R&D covers fundamental research, industrial research and experimental development, as per the definition given in the <u>EU R&D&I state aid framework</u>8. It may include exploration and design of solutions and prototyping up to the original development of a limited volume of first products or services in the form of a test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards.⁹ R&D does not include quantity production or supply to establish commercial viability or to recover R&D costs. It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements. The purchase of commercial volumes of products or services is not permitted.

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See Point 15 of the <u>Commission Communication on a framework for state aid for research and development and innovation</u> (C(2014) 3282).

See Article XV(1)(e) WTO GPA 1994 and the Article XIII(1)(f) of the revised WTO GPA 2014.

The definition of services means that the value of the total amount of products covered by the contract must be less than 50 % of the total value of the PCP framework agreement.

A declaration of honour and the following evidence is required:

- the financial part of the offer for the framework agreement must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement
- the financial part of the offer for each phase must give a breakdown of the price for that phase in terms of units and unit prices for every type of item in the contract, distinguishing clearly the units and unit prices for items that concern products
- the offers for all 3 phases may include only items needed to address the challenge in question and to deliver the R&D services described in the request for tenders
- the offers for all 3 phases must offer services matching the R&D definition above
- the total value of products offered in phase 1 respectively phase 2 must be less than 50 % of the value of the phase 1 respectively phase 2 contract and the total value of products offered in phase 3 must be so that the total value of products offered in all phases (1,2 and 3) is less than 50% of the total value of the PCP framework agreement.

B) Compatibility with other public financing

Tenders that receive public funding from other sources will be excluded if this leads to double public financing or an accumulation of different types of public financing that is not permitted by EU legislation, *including EU state aid rules*.

A declaration of honour confirming that there is no incompatible public financing is requested as to demonstrate compliance with this criterion.

C) Compliance with requirements relating to the place of performance of the Contract

Tenders will be excluded if they do not meet the following requirements relating to the place of performance of the contract:

 at least 50% of the total value of activities covered by each specific contract for PCP phase 1 and 2 must be performed in the EU Member States or in H2020 associated countries. The principal R&D staff working on each specific contract must be located in the EU Member States or H2020 associated countries. at least 50% of the total value of activities covered by the framework agreement (i.e. the total value of the activities covered by phase 1 + the total value of the activities covered by phase 2 + the total value of the activities covered by phase 3) must be performed in the EU Member States or H2020 associated countries. The principal R&D staff working on the PCP must be located in the EU Member States or H2020 associated countries.

The percentage is calculated as the part of the total monetary value of the contract that is allocated to activities performed in the EU Member States or in other countries associated to Horizon 2020. All activities covered by the contract are included in the calculation (i.e. all R&D and operational activities that are needed to perform the R&D services, e.g. research, development, testing and certifying solutions). This includes all activities performed under the contract by contractors and, if applicable, their subcontractors.

The principal R&D staff are the main researchers, developers and testers responsible for leading the R&D activities covered by the contract.

The countries associated to Horizon 2020 are those listed as associated countries in the Participant Portal Online Manual¹⁰.

A declaration of honour and the following evidence is required:

- the financial part of the offer must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement and give a breakdown of the price for the current phase in terms of units and unit prices (hours and unit price per hour), for every type of item in the contract (e.g. junior and senior researchers)
- a list of staff working on the specific contract (including for subcontractors), indicating clearly their role in performing the contract (i.e. whether they are principal R&D staff or not) and the location (country) where they will carry out their tasks under the contract
- a confirmation or declaration of honour that, where certain activities forming
 part of the contract are subcontracted, subcontractors will be required to
 comply with the place of performance obligation to ensure that the minimum
 percentage of the total amount of activities that has to be performed in the
 EU Member States or in countries participating in Horizon 2020 is respected.

D) Compliance with ethics requirements

Tenders will be excluded if they:

do not comply with the following rules:

¹⁰ List of H2020 associated countries.

- ethical principles (including the highest standards of research integrity, notably as set out in the <u>European Code of Conduct for</u> <u>Research Integrity</u>¹¹, and, in particular, avoiding fabrication, falsification, plagiarism and other research misconduct)
- o applicable international, EU and national law
- include plans to carry out activities in a country outside the EU if they are prohibited in all Member States or plans to destroy human embryos
- include activities whose aim is to:
 - carry out human cloning for reproductive purposes
 - modify the genetic heritage of human beings in such a way as could make such changes heritable (with the exception of research relating to cancer treatment of the gonads)
 - create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer
- include activities that do not focus exclusively on civil applications

If the tender involves activities that raise ethical issues, the tenderer must submit an ethics self-assessment that:

- describes how the tender meets the legal and ethical requirements of the country or countries where the tasks raising ethical issues are to be carried out
- explains in detail how the tenderer intends to address the ethical issues identified, in particular as regards:
 - o objectives (e.g. dealing with vulnerable populations and dual-use $goods^{12}$)
 - o methodology (e.g. involvement of children and related consent procedure and protection of data collected)
 - the potential impact (e.g. issues relating to the dual use of goods, environmental damage, stigmatisation of particular social groups, political or financial retaliation, benefit-sharing and malevolent use of results).

¹¹ The <u>European Code of Conduct for Research Integrity</u> of ALLEA (All European Academies).

¹² See Article 2(1) EU Export Control Regulation No <u>428/2009.</u>

① For information on ethics issues, see the guidance for EU grant beneficiaries How to complete your ethics self-assessment.

A declaration of honour is requested as evidence.

Attention:

Call-offs for phases 2 and 3 may request that this information shall be updated in the offers submitted for these phases.

Before starting the particular task that raises ethical issues, contractors must provide a copy of:

- any ethics committee opinion required under national law; and
- any notification or authorisation for activities raising ethical issues required under national law.

The framework agreement contains a provision on ethics.

E) Compliance with Security Requirements

Tenders will be excluded if they do not:

- comply with:
 - EU, national and international law on dual-use goods or dangerous materials and substances
 - the security aspect letter (SAL) annexed to the H2020 grant agreement and the Decision No 2015/444¹³

Tenders themselves must not contain any classified information.

If the output of activities or results proposed in the tender raise security issues or uses EU-classified information, the tenderer must show that these issues are being handled correctly. In such a case, tenderers are required to ensure and provide evidence of the adequate clearance of all relevant facilities. They must examine any issues (such as those relating to access to classified information or export or transfer control) with the national authorities before submitting their offer. Tenders must include a draft security classification guide (SCG), indicating the expected levels of security classification.

A declaration of honour is requested as evidence.

Attention:

Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information

If necessary for the tender procedure or for performing the contract itself, contractors will be requested to ensure appropriate security clearance for third parties (e.g. for personnel).

Call-offs for phases 2 and 3 may request that this security information shall be updated in the offers submitted for that phase.

Before starting the particular task that raises security issues, contractors must provide a copy of any export or transfer licences required under EU, national or international law.

The framework agreement and/or the specific contracts contain a provision on security.

- ① For information on security, see the guidance for EU grant beneficiaries: Guidelines for the handling of classified information in EU research projects.
 - **Attention:** Should there be any doubt as to any of these criteria, tenderers may be requested to provide additional information.

> Weighted award criteria

Weighted award criteria	Maximum points	Weighting
Phase 1: Solution design		
1.Contract Implementattion		10%
Feasibility of the Project plan and schedule	5	
Methodology of the Project, including risk management and quality assurance	5	
2.Functional Quality Criteria		45%
Objective 1 - The Toolkit provides a system to recover traces efficiently using tape lifts or other lifting systems 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	3	
Objective 2 - The Toolkit allows further analysis of recovered traces using tape system lifts or other lifting systems 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	
Objective 3 - The Toolkit contains an automated microscope that provides images in various illumination modes 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	

Objective 4 -The Toolkit converts acquired images to information (IP) 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	7	
Objective 5 - The Toolkit shall include a Graphical User Interface 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	
Objective 6- The Toolkit stores and enquiries data and helps in its interpretation 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	7	
Objective 7 Toolkit practical issues to be met 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	3	
Objective 8: Minimisation of classification 1.1: Describe how your solution will achieve this Objective. 1.2: Describe how your solution will be innovative in this domain.	10	
3.Non-Functional Quality Criteria		15%
Objective 1: Quality and traceability How will the proposed solution addresses the quality and traceability requirements? Please explain.		
Objective 2: Modularity and integration How will the proposed solution addresses the modularity and integration requirements.Please explain.	3	
Ojective 3: Training How will the proposed solution addresses the training requirements. Please explain.	3	
Objective 4: Maintenance How will the proposed solution addresses the maintenance requirements. Please explain.	2	
Objective 5: Solution technology readiness How will the evolution of solution's TRL throughout the project lifecyclebe demonstrated the evolution. Please explain.	2	
Objective 6: User Expierience How well the proposed solution addresses the end users' needs.	3	
4. Commercial Feasibility		5%
Exploitation Plan - Short to Mid-Term exploitation plan, including a commercialisation strategy. Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management	1 /	
Commercial Viability. Sense of reality and feasibility of the principles for licensing, pricing, packaging, distribution	3	
5. Evaluation of the solution and sustainability of testing		5%

Describe your vision and plan on executing prototype and pilot testing.	5	
6.Price		20%
Binding contract Price for carrying out the work in the present Phase	20	

Weighted award criteria	Maximum points	Weighting
Phase 2: Prototype development		
1.Contract Implementattion		10%
Feasibility of the Project plan and schedule	5	
Methodology of the Project, including risk management and quality assurance	5	
2.Functional Quality Criteria		40%
Objective 1 - The Toolkit provides a system to recover traces efficiently using tape lifts or other lifting systems 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	3	
Objective 2 - The Toolkit allows further analysis of recovered traces using tape system lifts or other lifting systems 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	4	
Objective 3 - The Toolkit contains an automated microscope that provides images in various illumination modes 1.1 Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	
Objective 4 -The Toolkit converts acquired images to information (IP) 1.1 Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	

Objective 5 - The Toolkit shall include a Graphical User Interface 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	4	
Objective 6 - The Toolkit stores and enquiries data and helps in its interpretation 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	5	
Objective 7 – The Toolkit practical issues to be met 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	4	
Objective 8: Minimisation of classification 1.1: Describe how your development procedure of the first prototype and lab testing approach will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	10	
3.Non-Functional Quality Criteria		10%
Objective 1: Quality and traceability Does the proposed solution address the quality and traceability requirements? Please explain.	1	
Objective 2: Modularity and integration How will the proposed solution address the modularity and integration requirements? Please explain.	2	
Ojective 3: Training How will the proposed solution address the training requirements?Please explain.	2	
Objective 4: Maintenance Does the proposed solution address the maintenance requirements? Please explain.	1	
Objective 5: Solution technology readiness Is the evolution of solution's TRL throughout the project lifecycle demonstrated?Please explain.	1	
Objective 6: User Expierience How will the proposed solution address the end users' needs?Please explain.	3	
4. Commercial Feasibility		10%
Exploitation Plan - Short to Mid-Term exploitation plan, including a commercialisation strategy. Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management	5	

Commercial Viability. Sense of reality and feasibility of the principles for licensing, pricing, packaging, distribution	5	
5. Evaluation of the solution and sustainability of testing		10%
Describe your vision and plan on executing prototype and pilot testing.	10	
6.Price		20%
Binding contract Price for carrying out the work in the present Phase	20	

Weighted award criteria	Maximum points	Weighting
Phase 3: Operational Validation		
1.Contract Implementattion		8%
Feasibility of the Project plan and schedule	4	
Methodology of the Project, including risk management and quality assurance	4	
2.Functional Quality Criteria		30%
Objective 1 - The Toolkit provides a system to recover traces efficiently using tape lifts or other lifting systems 1.1: Describe how your Final Solution Acceptance Testing will address this Objective. 1.2: Describe how your solution will be innovative in this domain.	2	

Objective 2 - The Toolkit allows further analysis of recovered traces using tape system lifts or other lifting systems		
1.1: Describe how your Final Solution Acceptance Testing solution will address this Objective.	3	
1.2: Describe how your solution will be innovative in this domain.		
Objective 3 - The Toolkit contains an automated microscope that		
provides images in various illumination modes		
1.1: Describe how your Final Solution Acceptance Testing solution	4	
will address this Objective.		
1.2: Describe how your solution will be innovative in this domain.		
Objective 4 -The Toolkit converts acquired images to information		
(IP)		
1.1: Describe how your Final Solution Acceptance Testing solution	4	
will address this Objective.		
1.2: Describe how your solution will be innovative in this domain.		
Objective 5 - The Toolkit shall include a Graphical User Interface		
1.1: Describe how your Final Solution Acceptance Testing solution		
will address this Objective.	4	
1.2: Describe how your solution will be innovative in this domain.		
Objective 6 - The Toolkit stores and enquiries data and helps in		
its interpretation		
1.1: Describe how your Final Solution Acceptance Testing solution	4	
will address this Objective.		
1.2: Describe how your solution will be innovative in this domain.		
Objective 7 – The Toolkit practical issues to be met		
1.1: Describe how your Final Solution Acceptance Testing solution	2	
will address this Objective.	2	
1.2: Describe how your solution will be innovative in this domain.		
Objective 8: Minimisation of classification		
1.1: Describe how your Final Solution Acceptance Testing solution	7	
will address this Objective.	,	
1.2: Describe how your solution will be innovative in this domain.		
3.Non-Functional Quality Criteria		7%
Objective 1: Quality and traceability		
Objective 1: Quality and traceability Does the proposed solution address the quality and traceability	1	
Does the proposed solution address the quality and traceability	1	
	1	
Does the proposed solution address the quality and traceability	1	
Does the proposed solution address the quality and traceability requirements?	1	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration	_	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and	_	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and	1	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and integration requirements?	_	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and integration requirements? Ojective 3: Training	1	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and integration requirements? Ojective 3: Training	1	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and integration requirements? Ojective 3: Training Does the proposed solution address the training requirements?	1	
Does the proposed solution address the quality and traceability requirements? Objective 2: Modularity and integration Does the proposed solution address the modularity and integration requirements? Ojective 3: Training Does the proposed solution address the training requirements? Objective 4: Maintenance	1	

Objective 5: Solution technology readiness Is the evolution of solution's TRL throughout the project lifecycle demonstrated?	1	
Objective 6: User Expierience How will the proposed solution address the end users' needs?Please explain.	2	
4. Commercial Feasibility		15%
Exploitation Plan - Short to Mid-Term exploitation plan, including a commercialization strategy. Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management	7	
Commercial Viability. Sense of reality and feasibility of the principles for licensing, pricing, packaging, distribution	8	
5. Evaluation of the solution and sustainability of testing		20%
Describe your vision and plan on executing prototype and pilot testing.	20	
6.Price		20%
Binding contract Price for carrying out the work in the present Phase	20	

Attention:

Additional sub-criteria may be added for the call-offs for phases 2 and 3, as a way of making the award criteria more precise, provided that they do not substantially change the existing criteria.

Should there be any doubt as to any of these criteria, tenderers may be requested to provide additional information.

The table below contains the Scoring Model that will be used by the TB and the CB to assess and score the extent to which a Tender/Offer is meeting the Award Criteria.

Score	Textual Description	

0	The description fails to address the Objective or cannot be assessed due to missing or incomplete information
0,2	Poor – Objective is inadequately addressed or there are serious inherent weaknesses
0,4	Fair – The description broadly addresses the Objective, but there are significant weaknesses
0,6	Good – The description addresses the Objective well, but a number of shortcomings are present
0,8	Very good – The description addresses the Objective very well, but a small number of shortcomings are present
1	Excellent – The description successfully addresses all relevant aspects of the Objective. Any shortcomings are minor.

Explanation: Every score per quality criterion (all, will be multiplied with the weight for the criterion). For example, if a tender scores 0,8 points (Very good) for sub criterion X, this means this tender receives 0,8 points * 5 = 4 points in total for this criterion out of a maximum of 5 points. Per criterion, this same methodology will be used. If a tender would score the maximum number of points for every criterion, a total maximum technical score of 80 points can be given.

3.5. Evaluation Overview

There are two types of evaluations under this PCP:

- . Evaluation process intended to rank the Tenderers in order to award Contracts to the best ranked Tenders (see section 3.6);
- . Evaluation process intended to assess the outcome of the work executed in a particular Phase. This evaluation will lead to the decision of payments and regarding the eligibility of a Contractor to bid for the next Phase. (see section 6)

For the purpose of the evaluation of the received tenders, the Contracting Authority shall appoint the following:

Contracting Board (CB)

The Contracting Board (CB) consisting of at least one representative of each forensic laboratory, chaired by the Contracting Authority representative, is responsible to steer the contracting process and the contract execution.

Technical Board

The Technical Board (TB) is composed by the technical representatives of each forensic laboratory, chaired by the Contracting Authority representative, is responsible regarding security, research or technical aspects.

KEMEA-SHUTTLE Procurement Board

KEMEA-SHUTTLE Procurement Board (PB) is composed by at least three members of the Contracting Authority and it is responsible for the Administrative evaluation. Its task in particular is the evaluation of legal, formal, administrative aspects of the tenders.

Tenders will be evaluated in a non-discriminatory and transparent manner.

3.6. Evaluation of the submitted Tenders and initial Contract Award

The evaluation process will be carrying out the following six steps:

- ullet Step 1 Checking whether the Exclusion Grounds apply to the Tenderer
- Step 2 —For tenderers passing Step 1, assessing whether the tenderer has the necessary capacities to perform the contract, on the basis of the selection criteria
- Step 3 For tenderers passing Step 2, evaluating the tender based on the on/off award criteria
- Step 4 For tenderers passing Step 3, evaluating the tender based on the weighted award criteria
- Step 5 Opening of the Economical offers
- Step 6 Final ranking

3.6.1. Scoring

Awarded points for each criterion has to be multiplied by weighting percentage for particular criteria leading to a final score per criteria. Final score for Tenderer is a sum of all final criteria scores.

The maximum scoring obtained after the proposal evaluation shall be 100 points, where:

- 20 percentage points correspond to the Financial Offer, and
- 80 percentage points correspond to the **Technical Offer**
- Following the Scoring Model:

$$Li = 80 * (Ti /Tmax) + 20 * (Fmin/Fi)$$

- Where Tmax Technical Score of the Best Technical Tender
- Ti Technical Score of the Tender i
- · Fmin Lower Price of all Tenders

- Fi Price of the Tender i
- Li Total Score of the Offer i rounded to two decimals places.

Tenders not complying with conditions on the content and format of the offer will be excluded from the tender evaluation.

Completeness and formal correctness of the tender procedure will be checked; in case of lack of documents, incompleteness and any other non-essential irregularities of the tender, the Contracting Authority will request the necessary additions and clarifications. The Contracting Authority will conduct the necessary regularization by requesting the information from the tenderer. Corrections will have to be received within five (5) working days after the request from the CA, otherwise the offer will be excluded.

The KEMEA SHUTTLE PB will proceed with the tenderers' eligibility based on the information provided in the Administrative section of the proposal.

Once the evaluation of the technical offers has been completed, Contracting Authority will communicate electronically the technical scores assigned to the tenderers to the Buyers Group.

Then the TB and the CB will proceed to the scoring, according to the criteria and procedures described above. At the end of the evaluation procedure, a ranking will be drawn up, in which the tenders will be inserted based on the overall score achieved, in descending order.

In case that tenders of two or more tenderers obtain the same overall score, but with different partial scores for the price and for all the other different evaluation elements, the tenderer who obtained the best score on the Technical Offer will be placed first in the ranking.

3.6.2 Evaluation Criteria for Phase 2 and 3

The above criteria, on/off and weighted criteria, will also subsequently be used for Call offs for Phase 2 and Phase 3, though elaborated and developed in further detail for the specific purposes of each such Phase. Additional sub-criteria may be added for the Call-offs for Phases 2 and 3, as a way of making the Award Criteria more precise, provided that they do not substantially change the existing criteria. Before the start of Phase 2/3, the Contracting Authority shall issue a Call-off.

3.6.3. Procedures for appeal

Submission of complaints shall not lead to unreasonable delays in the evaluation and award procedures.

All possible complaints during the tendering process will be submitted to the Contracting Authority (CA), within ten (10) days following the notification of the decision of the Contracting Board (CB). The CA will forward the complaints to the

TB which is responsible to evaluate the complaints and to submit its opinion to the CB for final decision.

Possible complaints against any final decision of the CB may be reviewed by the Greek courts¹⁴.

Any dispute or claim arising in connection with the execution of the contracts shall be heard by the Greek courts.

14 https://europa.eu/youreurope/business/selling-in-eu/public-contracts/request-review-public-procurement-procedure/index_en.htm

SECTION 4: CONTENT & FORMAT OF TENDERS

4.1. Tender submission-Content & Format

All Tenderers must use the SHUTTLE Tender Documents, which can be accessed along with all of the other Tender Documents by following the instructions in the Contract Notice on TED. The Tender Documents are published on the SHUTTLE website – www.shuttle-pcp.eu.

All Tenders must be submitted as follows;

Dossier (R&D Services within the SHUTTLE Project)

They should be addressed at the Contracting Authority: Center for Security Studies (KEMEA), Hellenic Ministry of Interior, 4, P. Kanellopoulou str. 10177, Athens, Greece. They should be submitted no later than the 12:00 (Athens time) on 20 November 2019. They should be delivered by one of the following ways:

- -By hand at the official registry office of KEMEA at the above mentioned address
- -By registered post services with shipment notice. In such case, bidders should inform the Contracting Authority of the dispatch of the tender by fax, telegram or email on the same day, attaching a proof of the date of shipment, which must be before the deadline for the submission of tenders. In any case, the Contracting Authority must receive the documentation within five days of the deadline for submission. Failing this requirement, offers will not be admitted.

All Tenders must be submitted in three separate and independent envelopes (A, B and C), in a way that allows the secrecy of the content of each one to be guaranteed until their formal opening.

Said envelopes should:

- Be signed by the bidder or its duly accredited representative, stating the full name (or entity name) of both and identifying the tender, a telephone number and an email address for contact.
- Include a list of the contained documentation.
- Contain an electronic copy of their full content. This electronic copy may only be submitted on a DVD or memory stick (any other digital media will not be allowed) and shall be recorded exclusively in one PDF document.

Tenders that do not comply with the formal requirements will automatically be rejected.

Tenders are secret and the submission thereof implies unconditional acceptance of all terms and conditions contained in this Call for tender. Under penalty of exclusion, tenders must not contain any reservation in relation to any point in the Tender terms and conditions.

Each bidder must present no more than one tender and must not sign any tender in a temporary consortium with others if it has done so individually, appear in more than one temporary consortium, or present itself jointly with other bidders with an undertaking to set up a company. Failure to comply with this rule will lead to the automatic rejection of all that is submitted.

More detailed information about the final layout requirements for the phase 2 and 3 offers will be provided in the call-off.

The period of validity of the Tenders is six (6) months from the deadline indicated above (shorter validity period shall be rejected as inadmissible).

All Tenders must be submitted in accordance with the following rules:

- Tenders and supporting documents must be written in English or a full English translation, provided at no cost to the Procuring Entity.
- Tenders must not be qualified or accompanied by statements or a covering letter that might be construed as rendering the tender equivocal. Unauthorized alterations or additions must not be made to any component of the tender documents.

4.2. Opening of tenders

Opening of the envelopes will take place 16:00h (Athens time) on 25 November 2019 at the following location:

Center for Security Studies (KEMEA), Hellenic Ministry of Interior, 4, P. Kanellopoulou str. 10177, Athens, Greece.

Opening of the envelopes will be carried out by the SHUTTLE-KEMEA Procurement Board.

An authorised representative of each tenderer may attend the opening.

Companies wishing to attend are requested to notify their intention by sending an e-mail to: shuttle-procurement@kemea-research.gr at least 48 hours in advance. This notification must be signed by an authorised officer of the tenderer and specify the name of the person who will attend the opening of the call for expression of interest on the tenderer's behalf.

Person of the Contracting Authority to provide all relevant information/clarification is: Name: Maria, Surname: Kampa, Phone: +030 2107710805 int. 393, Fax: +030 2111004499, Email: shuttle-procurement@kemea-research.gr

4.3 Administrative section (ENVELOPE A)

Envelope A shall contain information and evidence on the legal capacity non-disqualification from exclusion criteria, economic and financial standing of the

bidder, technical and professional eligibility and fulfilment of the compliance criteria, to be provided by means of the documents and forms described below:

- . The legal capacity and the representation of the bidder shall be proved by means of the types of evidence referred to in Annex C of this Call for tender
- . In the case of a joint tender, the documentation referred to in Annex B1 of this Call for tender shall be provided.
- . In the case of subcontracting, the documentation referred to in Annex B2 of this Call for tender shall be provided.
- . The non-subjection of the bidder to any of the exclusion grounds contained in Annex A of this Call for tender shall be proved by means of the types of evidence referred to in that section.
- . The fulfilment of the bidder of the selection criteria contained in Annex A of this Call for tender shall be proved by means of the types of evidence referred to in that section.
- . The fulfilment of the bidder of the compliance criteria contained in Annex A of this Call for tender shall be proved by means of the types of evidence referred to in that section.

Should there be any doubt as to any of these requirements, bidders may be requested to provide additional information and/or evidence.

More detailed information for the phase 2 and 3 offers will be provided in the calloffs (in particular on the technical implementation plan, updated business plan and list of IPRs).

4.4 Technical section (ENVELOPE B)

Tenders must include a **technical offer**, containing:

- a technical plan that outlines: 1. the tenderer's idea for addressing all the requirements given in the PCP challenge description, relating both to functionality and performance; 2. technical details of how this would be implemented and 3.
- a project management plan that outlines the execution and monitoring approach, including a Gantt chart.
- a draft business plan that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market

- a list of the pre-existing rights (background) relevant to the tenderer's proposed solution, in order to allow IPR dependencies to be assessed
- a risk assessment and risk mitigation strategy
- a reply to the question "Does this tender involve ethical issues? (YES/NO)" and if YES, an ethics self-assessment, with explanations how the ethical issues will be addressed
- a reply to the question "Does this tender involve: activities or results that may raise security issues and/or EU-classified information¹⁵ as background or results? (YES/NO)" and if YES information on how these issues will be addressed

Attention:

Tenders failing to meet these requirements will be excluded.

The technical part must provide a *detailed* technical offer for phase 1 (including an explanation of the methodology, a work plan and details of deliverables and milestones), and must specify the plans for and objectives of the subsequent phases 2 and 3 and beyond (including a plan for commercial exploitation of the results).

The information provided in the technical section of the tender will be used to evaluate the tenders, on the basis of the technical award criteria and the on/off award criteria A, D and E.

More detailed information for the phase 2 and 3 offers (in particular on the technical implementation plan, updated business plan and list of IPRs) will be provided in the call-offs.

4.5 Financial section (ENVELOPE C)

The tender must include a detailed **financial offer** specifying:

- binding unit prices for all items needed for carrying out phase 1 and for items that are expected to be needed for phases 2 and 3 (given in euros, excluding VAT but including any other taxes and duties)
- a fixed **total price** for phase 1 and an estimated total price for phases 2 and 3, broken down to show unit prices and the number of each unit needed to carry out phase 1 (given in euros, excluding VAT but including any other taxes and duties).

In addition, the financial section must include:

¹⁵ See <u>Decision 2015/444/EC, Euratom</u> on the provisions on security of EU-classified information.

- a price breakdown that shows the price for R&D services and the price for supplies of products (to demonstrate compliance with the definition of R&D in on/off award criterion A)
- a **price breakdown** that shows the location or country in which the different categories of activities are to be carried out (e.g. x hours of senior researchers in country L at y euro/hour; a hours of junior developers in country M at b euro/hour) (to demonstrate compliance with the requirement relating to place of performance in on/off award criterion C)
- the **financial compensation** valuing the benefits and risks of the allocation of ownership of the **IPRs** to the contractor (i.e. IPRs generated by the contractor during the PCP), by giving an absolute value for the price reduction between the price offered in the tender compared to the exclusive development price (i.e. the price that would have been quoted were IPR ownership to be transferred to the procurers)

in order to ensure compliance with the EU R&D&I state aid framework.

Attention: The unit prices quoted for each category of items (e.g. hourly rates for junior and senior researchers, developers and testers) remain binding for all phases (i.e. for the duration of the framework agreement).

The financial compensation for allocating IPR ownership to the contractor must reflect the market value of the benefits received (i.e. the opportunity that the IPRs offer for commercial exploitation) and the risks assumed by the contractor (e.g. the cost of maintaining IPRs and bringing the products onto the market). (Note that when the value of the risks equals or exceeds the value of the benefits, the financial compensation offered by vendors may be zero.)

The price that will be evaluated is the Actual Price offered.

The information provided in the financial section of the tender will be used to evaluate the tenders on the basis of the price award criteria and the on/off award criteria A and C.

More detailed information for the phase 2 and 3 offers will be provided in the calloff. The price for phase 2 and 3 offers must be based on the binding unit prices in the tender and the price conditions set out in the framework agreement. Where new units/unit prices (e.g. for new tasks or equipment) are subsequently added to the phase 2 or 3 offers, they will become binding for the remaining phases.

Similar price breakdowns will be requested for the call-offs for phase 2 and 3.

The VAT regime of Greece will be applied.

SECTION 5: MISCELLANEOUS

5.1 Language

All communication (relating to either the tender procedure or the implementation of the contract) must be carried out in English.

Tenders as well as offers for phase 2 and 3 call-offs must be submitted in English.

Deliverables must be submitted in English.

5.2 Tender constitutes binding offer

A signed tender will be considered to constitute a firm, irrevocable, unchangeable and binding offer from the tenderer. The Tenderers signatory must have the proven power and capacity.

The signature of an authorised representative will be considered as the signature of the tender (and will be binding on the tenderer or, for joint tenders, the group of tenderers).

5.3 Communication

A webinar will be held on 7/10/2019 to discuss the Tender Documents and discuss the procedure and answer potential Tenderers' questions or requests for clarification. Registration details will be made available on the Project website.

The Q&A from the open market consultation can be found on www.shuttle-pcp.eu

For further questions, you may contact the Contracting Authority via email (shuttle-procurement@kemea-research.gr) and/or by other means in English until 10/10/2019.

All questions or requests for clarification must be received by the Contracting Authority no later than 10/10/2019. Any questions received after this deadline will not be answered. The questions or requests for clarification must be addressed to:

E-mail: shuttle-procurement@kemea-research.gr

Please mention the SHUTTLE Procurement Reference No XXX in the subject line of your emails. With each question the correct document reference and page number should be clearly stated. The summary of all questions and answers will be presented in an anonymized Q&A document that will be published on www.shuttle-pcp.eu in English , the 20/10/2019. For Phases 2 and 3, the Q&A will not be published, but distributed to all Contractors that successfully completed the previous Phase. Unless otherwise instructed, please do not use any other contact addresses or means or contact any other persons in connection with this procurement.

Attention: All other contacts (or attempted contacts) will be considered unauthorised and may lead to the exclusion of your tender.

5.4 Confidentiality

Tenderers must keep confidential any information obtained in the context of the tender procedure (including EU-classified information¹⁶).

All documentation, data, statistics, drawings, information, samples or material disclosed or furnished by the Contracting Authority to Tenderers during the course of this Competition:

- are furnished for the sole purpose of replying to this PCP only;
- 2. may not be used, communicated, reproduced or published for any other purpose without the prior written permission of the Contracting Authority;
- 3. shall be treated as confidential by the Tenderer and by any third parties (including Subcontractors) engaged or consulted by the Tenderer; and
- 4. must be returned immediately to the Contracting Authority upon cancellation or completion of this PCP if so required by the Contracting Authority.

In respect of any Trade Secrets such as business plans, R&D maps or trajectories, customer lists etc. that it may receive from the Tenderer, the Contracting Authority undertakes to keep secret and strictly confidential and to ensure that all members of the Group of Procurers will be bound by the same confidentiality obligations towards the Contractor.

5.5. Freedom of Information

The principle of public access to official documents means that public documents and records (with a few exceptions) should be made available to whoever asks for them. The principle is balanced by the obligation of professional secrecy, that stipulates that public authorities are obliged to protect business secrets of others, if disclosure may seriously harm their interests.

Without prejudice to the confidentiality rules under Clause 6 of the Framework Agreement, Tenderers are asked to consider if any of the information supplied by them in their Tender should not be disclosed because of its confidentiality or commercial sensitivity. If Tenderers consider that certain information is not to be disclosed because of its confidentiality or commercial sensitivity, Tenderers must, when providing such information, clearly identify the specific sections of their Tender containing such information and specify the reasons for its confidentiality or commercial sensitivity.

Tenderers should however be aware that the Contracting Authority reserves the right to publish public summaries of the results of the SHUTTLE PCP Projects (Phase 1, 2 and 3), including information of the key R&D results attained and lessons learned by the SHUTTLE Consortium. Details will not be disclosed that will

¹⁶ Commission Decision 2015/444/EC, <u>Furatom</u> of 13 March 2015 on the security rules for protecting EU-classified information.

harm the legitimate business interest of the Contractors involved in the SHUTTLE PCP or that would distort fair competition on the market. The Contracting Authority will also distribute and publish the following information about the Contractors that are awarded with contracts:

- The name of the organisation
- Their location
- The title of the Project
- A short summary of the Project
- Contract value

The above award information will be sent to the "contact information details" stated in the Tender. Experts, employees of the Contracting Authority and other persons contracted to aid in the tendering and award process will handle all information confidentially in compliance with the above procedure. Experts with a conflict of interest with one or more of the tenders will not assess these Tenders.

5.6. Data Protection

The contractor shall process personal data in the proposal documentation in compliance with the applicable EU and national law on data protection (including as well information related to authorisations and notification requirements).

The contractor may grant its staff access to data only in so far as it is strictly necessary for implementing the Tender proposal.

The contractor must inform the staff whose personal data are collected and processed by the procurer. For this purpose, the contractor must provide them with the privacy statements of the procurer, before transmitting their data. If explicit prior consent from the data subjects is needed, the contractor must obtain such consent.

Please refer to Article 12 — Processing of personal data of the Framework Agreement for the data protection handling during the contracts' implementation.

5.7 Cancellation of the tender procedure

The procurers may, at any moment, cease to proceed with the tender procedure and cancel it.

The procurers reserve the right not to award any contracts at the end of the tender procedure.

The procurers are not liable for any expense or loss the tenderers may have incurred in preparing their offer.

SECTION 6: CONDITIONS OF CONTRACTS

6.1. Contract implementation

Successful tenderers will be requested to sign both a framework agreement and specific contracts for phases 1, 2 and 3 (see Annex D,E).

Monitoring

During each phase, contract implementation will be monitored periodically and reviewed against the expected outcomes for the phase.

Each contractor will be assigned a main contact person (their supervisor) appointed by the procurers.

There will be regular monitoring meetings between the contractor and the Technical Board.

The intensity of monitoring and communication between the Buyers group and the contractors will increase from Phase 1 to Phase 3. Monitoring meetings can be held physically or online and will be subject to agreement between the parties. The contractor will be asked to discuss the results achieved in the preceding period and present an updated work plan. The supervisor, or any party designated by it, is entitled to visit the premises of the contractor.

The Technical Board and /or supervisor will provide written feedback in writing or electronically to contractors after meetings or visits. Detailed information on the role of the supervisor will be provided after award of a specific contract. The role is intended to allow contractors to improve the way in which their solutions address the problem set out in the PCP challenge.

6.2 Payments based on Satisfactory Completion of Milestones and Deliverables of the Phase

Payments corresponding to each PCP phase will be subject to the *satisfactory* completion of the deliverables and milestones for that phase.

Satisfactory completion will be assessed by the Technical Board composed of members of the buyers group.

Satisfactory completion will be assessed according to the following requirements:

- if the work corresponding to that milestone / deliverable has been carried out
- if a reasonable minimum quality has been delivered
- if the reports have been submitted on time
- if the money have been allocated to the planned objectives
- if the money have been allocated and the work has been carried out according to the on/off award criteria (place of performance, public funding and R&D definition criteria)

and

• if the work has been carried out in compliance with the provisions of the contract (including in particular verification if the contractor has duly protected and managed IPRs generated in the respective phase).

'Reasonable minimum quality' of a report means that:

- the report can be read by somebody who is familiar with the topic, but not an expert
- the report gives insight in the tasks performed in and the results
- the report is made using the end of phase report form or (if applicable) the milestone report form and the requirements of this form have been met

'Reasonable minimum quality' of a demonstration (for phase 2 or 3) means:

- the demonstration can be understood by somebody who is familiar with the topic, but not an expert (for instance, somebody with operational but not technical knowledge)
- the demonstration shows how the innovation works, how it can be used and (if applicable) how it is operated and maintained
- the demonstration is accessible to parties appointed by the procurers, unless these are direct competitors of the contractor

Satisfactory completion in each of the phases does not mean successful completion.

Invoices must be submitted to the Contracting Authority.

Contractors' invoices must provide:

- a price breakdown showing the price for R&D services and the price for supplies of products (in order to demonstrate compliance with the definition of R&D in on/off award criterion A)
- a price breakdown showing the location or country in which the different categories of activities were performed (e.g. x hours of senior researchers in country L at y euro/hour, a hours of junior developers in country M at b euro/hour) (in order to demonstrate compliance with the requirement relating to the place of performance in on/off award criterion C).

6.3. Payments Schedule

For the payments schedule described below the Contractor is requested to provide the Contracting Authority along with the respective invoice, the following documentation:

- Tax Clearance
- Insurance Clearance
- Criminal Record of the legal representative

	Phase 1		Phase 2		Phase 3	
	Date	%	Date	%	Date	%
Pre-Payment	n/a	0	14/8/2020	5	17/5/2021	5
Interim-payment	15/5/2020	50	4/1/2021	45	14/8/2021	45
Final payment (afrer successful completion)	31/7/2020	50	30/4/2021	50	29/10/2021	50

The percentage stated in the table above for the Assessment payments are subject to the Contractor having fulfilled its obligations during the phase Satisfactory.

The dates stated are the **estimated** last payment dates (when the Procurer makes the payment, not when the Contractor receives it).

6.4. Eligibility for the next Phase based on Successful Completion of the Phase

Eligibility for participation in the next phase (Phase 2 and 3) will be subject to successful completion of the current phase.

Successful completion of a phase will be assessed by the Technical and submits its opinion to the Contracting Board for final decision against the following requirements:

- if all milestones have been successfully completed
- if the R&D results meet the minimum functionality/performance requirements of the challenge description (i.e. the minimum quality/efficiency improvements which the procurers set forward for the innovative solutions to achieve)
- if the results of the R&D are considered to be promising

'Promising' means:

- for phase 1, that the feasibility is convincing
- for phase 2, that the feasibility, the application in an operational setting and the potential impact of the product is convincing

Only contractors classified as "satisfactory" are eligible to have their work produced during a certain phase considered as "Successful".

6.5. Finalisation of phase 3: Possible follow-up PPI procurements

Follow-up PPI procurements for a *limited* set of prototypes and/or test products developed during this PCP procurement ('limited follow-up PPIs') may be awarded.

Follow-up PPI procurements for a *commercial volume* of the innovative solutions developed in this PCP procurement will be subject to a new call for tenders.

III. ANNEXES

ANNEX A

Declaration of Honour

I, the undersigned (name and surname) ¹⁷		
As an individual (or position within the legal entity)		
Of the following legal entity (hereafter the 'Bidder') (name of legal entity)		
With registered office in		
Street address		
Post code		
In the City of		
Telephone		

 $^{^{17}}$ If the Bidder is a consortium or association of several entities, each of the consortium's/association's members should issue this Form

Fax		
E-mail		
VAT reg. no.		
IF APPLICABLE:		
Acting in the context of a consortium or association of several entities together with the following entities:		
Attention: Please ensure that the others concerned provide a separate form.		
HEREBY STATE AND DECLARE		
under my own personal responsibility, fully aware of the infringements and penalties provided by the Greek Law in case of fraudulent statements,		
THAT		

SECTION 1

The Bidder fulfils the selection criteria set out under section 3.3 of the Tender.

Accordingly, the undersigned formally declares that the information stated under the above Section 2 and the certificates and other forms of documentary evidence provided are accurate and correct and that they have been set out in full awareness of the consequences of serious misrepresentation.

The undersigned formally declares to be able, upon request and without delay, to provide other certificates or forms of documentary evidence referred to, except where the contracting authority has the possibility of obtaining the supporting documentation concerned directly by accessing a national database of a Member State that is available free of charge. (This should be possible on the condition that the economic operator has provided the necessary information, thus allowing the contracting authority or contracting entity to have access. Where required, this must be accompanied by the relevant consent to do so).

SECTION 2

Ability to perform R&D up to original development of the first products or services and to commercially exploit the results of the PCP, including intangible results in particular IPRs

Has the economic operator the ability to perform R&D up to original development of the first products or services and to commercially exploit the results of the PCP, including intangible results in particular IPRs? Yes / No

- Provide a description of relevant reference and /or previous projects (executed during the last 5 years) which reflect the competences and capacity of the Tenderer in the different phases and domains of the SHUTTLE project, such as research, development, prototyping, testing and commercialisation. These references will be based on previous projects of the Tenderers and /or other members of the joint consortia and subcontractors who will be working on the project.
- -Demonstrate the expertise and working experience required to undertake an innovative R&D project by providing a number of CVs of key personnel and competences, which they consider necessary to complete the project.
- -Confirm the Business Continuity / Disaster Recovery / Risk Management plan that ensures that the described services are delivered in the event of a disruption affecting your business and ensures continuity of supply / service from your critical suppliers.
- -Confirm the appropriate level of insurance cover if it is to be successful in winning the contract.

SECTION 3

The Bidder fulfils the compliance criteria set out under section 3.4 of the Tender.

Accordingly, the undersigned formally declares that the information stated under the above Section 2 and the certificates and other forms of documentary evidence provided are accurate and correct and that they have been set out in full awareness of the consequences of serious misrepresentation.

The undersigned formally declares to be able, upon request and without delay, to provide other certificates or forms of documentary evidence referred to, except where the contracting authority has the possibility of obtaining the supporting documentation concerned directly by accessing a national database of a Member State that is available free of charge. (This should be possible on the condition that the economic operator has provided the necessary information, thus allowing the contracting authority or contracting entity to have access. Where required, this must be accompanied by the relevant consent to do so).

SECTION 4

1.COMPLIANCE WITH THE DEFINITION OF R&D SERVICES

Does the economic operator guarantee that it is in compliance with the requirements regarding the definition of R&D services as set out in the Tender? Yes / No

Please note that according to the Tender this circumstance must be accredited by the presentation of the financial part of the offer, which must contain the following information:

The financial part of the offer for the framework agreement must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement.

The financial part of the offer for each phase must give breakdown of the price for that phase in terms of units and unit prices for every type of item in the contract, distinguishing clearly the units and unit prices for items that concern products.

The offers for all three phases may include only items needed to address the challenge in question and to deliver the R&D services described in the request for tenders.

The offer for all the three phases must offer services matching the R&D definition above.

The total sum of the value of products offered in each phase and all previous phases must be less than 50% of the value of the framework agreement.

2.COMPLIANCE WITH OTHER PUBLIC FINANCING

Does the economic operator guarantee that it is not receiving any public funding

not permitted by EU legislation from other sources, including EU state aid rules, in areas of work related to the scope of the provision of services for the procurement in the terms established in the Tender? Yes / No

3.COMPLIANCE WITH REQUIREMENTS RELATING TO THE PLACE OF PERFORMANCE OF THE CONTRACTS

Does the economic operator guarantee that in case of selection it will comply with the requirements stated in the Tender Document regarding the place of performance of the contracts? Yes / No

Please note that according to the Tender the following evidence is required:

A list of staff working on the specific contract (including for subcontractors), indicating clearly their role in performing the contract (i.e. whether they are principal R&D staff or not) and the location (country) where they will carry out their tasks under the contract.

A confirmation or declaration of honour that, where certain activities forming part of the contract are subcontracted, subcontractors will be required to comply with the place of performance obligation to ensure that the minimum percentage of the total amount of activities that has to be performed in the EU Member States or in countries participating in Horizon 2020 is respected.

4.ETHICS, DATA PROTECTION AND RESEARCH INTEGRITY

Does the economic operator guarantee that in case of selection it will comply with the rules regarding ethics, data protection and research integrity set out in the Tender? Yes / No

5.SECURITY

Does the economic operator guarantee that in case of selection it will comply with the provisions regarding security set out in the Tender? Yes / No

SECTION 5

The Bidder is not involved in any of the exclusion grounds set out under section 3.2 of the Tender (or, if existing, under similar regulations in the country in which it is established).

Accordingly, the undersigned formally declares that the information stated under the above Section 2 and the certificates and other forms of documentary evidence provided are accurate and correct and that they have been set out in full awareness of the consequences of serious misrepresentation.

The undersigned formally declares to be able, upon request and without delay, to provide other certificates or forms of documentary evidence referred to, except where the contracting authority has the possibility of obtaining the supporting documentation concerned directly by accessing a national database of a Member State that is available free of charge. (This should be possible on the condition that the economic operator has provided the necessary information, thus allowing the contracting authority or contracting entity to have access. Where required, this must be accompanied by the relevant consent to do so).

SECTION 6

1.EXCLUSION GROUNDS RELATING TO THE CONFLICT OF INTEREST

the economic operator itself or any person who is a member of its administrative, nanagement or supervisory body or has powers of representation, decision or ontrol involved in any current or potential conflict of interest, as indicated in the ender documents, due to its participation in the procurement procedure or for any ther reason? Yes \square / No \square
lease describe it:
2.EXCLUSION GROUNDS RELATING TO BANKRUPTCY & PROFESSIONAL MISCONDUCT
s the economic operator itself bankrupt or is being wound up, is under compulsory dministration or is the subject of a composition or has indefinitely stopped its ayments or is subject to a prohibition on conducting business? Yes \Box / No \Box
lease describe it:

Is the economic operator itself the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding up or administration by the cour or composition or any other similar proceedings? Yes \Box / No \Box
Please describe it:
<u> </u>
<u> </u>
Has the economic operator itself been convicted by a judgment which has the force of <i>res judicata</i> for an offence relating to professional practice? Has the economic operator been guilty of grave professional misconduct and can the procuring agencies prove this? Yes \square / No \square
Please describe it:
Has the economic operator not fulfilled its obligations relating to social insurance charges or tax in its own country? Yes \Box / No \Box
Please describe it:

3.EXCLUSION GROUNDS RELATING TO CRIMINAL OFFENCES

a) Participation in a criminal organisation

Has the economic operator itself or any person who is a member of its administrative, management or supervisory body or has powers of representation, decision or control therein been the subject of a conviction by final judgement for participation in a criminal organisation, by a conviction rendered at the most five years ago or in which an exclusion period set out directly in the conviction continues to be applicable? Yes \Box / No \Box

Reason	
Who has been convicted	
Length of the period of exclusi	ion
b) Corruption	
administrative, management of decision or control therein bee corruption, by a conviction re	itself or any person who is a member of its or supervisory body or has powers of representation, en the subject of a conviction by final judgement for endered at the most five years ago or in which an cly in the conviction continues to be applicable? Yes
Date of conviction:	
Reason:	
Who has been convicted:	
Length of the period of exclusi	on:

c) Fraud
Has the economic operator itself or any person who is a member of its administrative, management or supervisory body or has powers of representation, decision or control therein been the subject of a conviction by final judgement for fraud, by a conviction rendered at the most five years ago or in which an exclusion period set out directly in the conviction continues to be applicable? Yes / No
Date of conviction:
Reason:
Who has been convicted:
Length of the period of exclusion:
e) Terrorist offences or offences linked to terrorist activities
Has the economic operator itself or any person who is a member of its administrative, management or supervisory body or has powers of representation, decision or control therein been the subject of a conviction by final judgement for terrorist offences or offences linked to terrorist activities, by a conviction rendered at the most five years ago or in which an exclusion period set out directly in the conviction continues to be applicable? Yes \Box / No \Box
Date of conviction:
Reason:
Who has been convicted:
Length of the period of exclusion:

f) Money laundering or terrorist financing

Has the economic operator itself or any person who is a member of its

money laundering or terrorist financing, by a conviction rendered at the most five years ago or in which an exclusion period set out directly in the conviction continues to be applicable? Yes \Box / No \Box
Date of conviction:
Reason:
Who has been convicted:
Length of the period of exclusion:
g) Child labour and other forms of trafficking in human beings Has the economic operator itself or any person who is a member of its administrative, management or supervisory body or has powers of representation, decision or control therein been the subject of a conviction by final judgement for child labour and other forms of trafficking in human beings, by a conviction rendered at the most five years ago or in which an exclusion period set out directly in the conviction continues to be applicable? Yes \(\sigma\)/ No\(\sigma\)
Reason:
Who has been convicted:
Length of the period of exclusion:

administrative, management or supervisory body or has powers of representation, decision or control therein been the subject of a conviction by final judgement for

4. EXCLUSION GROUNDS OF PROPOSED SOLUTION ALREADY AVAILABLE ON THE MARKET

Does the economic operator undertake that the tendered solution presented is not already available on the market? Yes \Box / No \Box

In witness whereof I sign this statement affidavit.

Place and date

Signature

ANNEX B1

Consortia Statement

I, the undersigned (name and surname), acting in the name of (name of the one of the members of the consortium), a company duly incorporated under the law of, with registered office, with
VAT no;
I, the undersigned (name and surname), acting in the name of (name of the one of the members of the consortium), a company duly incorporated under the law of, with registered office, with VAT no;
I, the undersigned (name and surname), acting in the name of (name of the one of the members of the consortium), a company duly incorporated under the law of, with registered office, with VAT no, in my capacity as;
I, the undersigned (name and surname), acting in the name of (name of the one of the members of the consortium), a company duly incorporated under the law of, with registered office, with VAT no;
Acting in the context of a consortium or association of several entities (hereafter the 'Consortium') (name of the consortium or the association)

HEREBY STATE AND DECLARE

under our own personal responsibility, fully aware of the infringements and penalties provided by the Greek Law in case of fraudulent statements,

THAT

1.- In connection with the SHUTTLE PCP Procedure, we have agreed to set up a team to participate jointly in the above-mentioned Procedure, undertaking to form

and to maintain a designed temporary Consortium of Bidders, in order to comply jointly with the purposes of the PCP Procedure and with the contracts. Within this Procedure, the team may be awarded to the Consortium in the event of being selected to have access/to access to Phase 1. During the whole period of validity of the commitment to maintain the Consortium of Bidders, which shall coincide with the period of time during which the Consortium is participating in the SHUTTLE PCP Procedure, each of the members of the Consortium shall assume the following participation:

Bidder Participation (%)

- **2.-** All of the members of the Consortium shall remain jointly and severally liable towards the Procuring Entity.
- **3.-** During the period of the PCP Procedure, the Consortium will be represented by (the name of the single authorized representative of the Consortium), with sufficient powers to exercise the rights and comply with the obligations that arise from the SHUTTLE PCP Procedure.
- **4.-** We also state that during the management of the Proposal selection, for the purposes of communications that may be necessary for its development, the team will be represented by (name, address, telephone, email).

The undersigned persons apply for admission to the above-mentioned PCP Procedure, having expressed their acceptance of all the provisions and conditions set out in the SHUTTLE PCP Invitation to Tender (IT).

Place and date

Signature

ANNEX B2

Subcontracting Statement

I, the undersigned (name and surname) ¹⁸		
As an individual (or position within the legal entity)		
Of the following legal entity (hereafter the 'Bidder') (name of legal entity)		
With registered office in		
Street address		
Post code		
In the City of		
Telephone		
Fax		

 $^{^{18}}$ If the Bidder is a consortium or association of several entities, each of the consortium's/association's members should issue this Form

E-mail
VAT reg. no.
IF APPLICABLE:
Acting in the context of a consortium or association of several entities together with the following entities:

HEREBY STATE AND DECLARE

under my own personal responsibility, fully aware of the infringements and penalties provided by the Greek Law in case of fraudulent statements,

THAT

According to the provisions set out in the Tender Documents, the Bidders intent on subcontracting the following parts of the scope of the SHUTTLE PCP Procedure:

ACTIVITY TO BE SUBCONTRACTED

NAME OF THE SUBCONTRACTOR

STATEMENT (According to Section 2)

THAT

I rely on the capacities of the proposed Subcontractors to perform part of the work in compliance with the requirements stated in the Call for Tenders and in its related documentation.

AND THAT

Hereby acknowledge and unconditionally states that the Subcontractor(s) is/are fully aware of the provisions set out in the Tender Documents, that it/they meet(s) the qualification requirements for the subcontracted service and that it/they have/has its/their resources at the Bidder disposal for the entire duration of the contract.

In witness whereof I sign this statement affidavit.

Place and date

Signature

ANNEX C Legal Capacity of the Bidder Statement

I, the undersigned (name and surname),		
As an individual (or position within the legal entity)		
Of the following legal entity (hereafter the 'Bidder')		
With registered office in		
Street address		
Post code		
In the City of		
Telephone		

E-mail	
VAT reg. no.	
IF APPLICABLE:	
Acting in the context of a consorwith the following entities:	tium or association of several entities together

Attention: Please ensure that the others concerned provide a separate form.

HEREBY STATE AND DECLARE

under my own personal responsibility, fully aware of the infringements and penalties provided by the Greek Law in case of fraudulent statements,

THAT

SECTION 1

The Bidder is empowered to contract with the Procuring Entity as, being free to act, is not involved in any of the exclusion grounds set out under section 3.2 of the Tender (or, if existing, under similar regulations in the country in which it is established).

Accordingly, the undersigned formally declares that the information stated under the above Section 2 and the certificates and other forms of documentary evidence provided are accurate and correct and that they have been set out in full awareness of the consequences of serious misrepresentation.

The undersigned formally declares to be able, upon request and without delay, to provide other certificates or forms of documentary evidence referred to, except where the contracting authority has the possibility of obtaining the supporting documentation concerned directly by accessing a national database of a Member State that is available free of charge. (This should be possible on the condition that the economic operator has provided the necessary information, thus allowing the contracting authority or contracting entity to have access. Where required, this must be accompanied by the relevant consent to do so).

SECTION 2

DECLARE FURTHERMORE

That the Bidder (just in case of legal persons), is registered at the following register

of legal persons according to t	he law of the country of establishment:
The activity performed is	
The registration number is	
The Bidder has run from	

The legal form of the Bidder is

The social object of the Bidder is	
The nationality of the Bidder is	
The address of the Bidder is	
And specifically list:	
Title:Surname:	Name:
Title:Surname:	Name:
Title:	Name:
Title:Surname:	Name:
Title:	Name:

In witness whereof I sign this statement affidavit.

Place and date

Signature

ANNEX D

PCP Framework Agreement

PREAMBLE

This is a framework agreement ("Agreement" or "Framework Agreement") between the following parties:

on the one part,

the "Contracting Authority", KENTRO MELETON ASFALEIAS (KEMEA), established in P KANELLOPOULOU 4 ST, ATHINA 10177, Greece.

acting in the name and on behalf of the procurers in the buyers group (together with the Contracting Authority: "procurers"):

- -MINISTERE DE L'INTERIEUR (MININT), and its two forensic laboratories: Forensic and Criminal Intelligence Agency of the French Gendarmerie (MININT-IRCGN) and Forensic laboratory of the French national police (MININT-INPS), France
- -Netherlands Forensic Institute (NFI), The Netherlands,
- -Lietuvos Teismo Ekspertizes Centras (LTEC), Lithuania,
- -Ministério da Justiça (PJ) Forensic laboratory of the Judicial police, Portugal
- -Ministry Of Public Security Israel National Police (MOPS INP), Israel.

and on the other hand, the "contractor", [insert details of the contractor],

[OPTION for joint tenders: acting in the name and on behalf of the other members of group of tenderers:

1. [insert the details of the members of the group of tenderers]

2.

The members of the group of tenderers are hereafter collectively referred to as "the contractor" and will be jointly and severally liable vis-à-vis the Contracting Authority for the performance of this Framework Agreement and the Specific Contracts.]

The Contracting Authority, buyers group and the contractor(s) shall be referred to together as "parties", unless otherwise specified.

By signing this Agreement the parties agree to implement the pre-commercial procurement in accordance with the Agreement and all the obligations it sets out.

The Agreement is composed of:

- Preamble
- Terms and Conditions

Annex 1 Request for tenders

Annex 2 Contractor's tender

TERMS AND CONDITIONS

Article 1 — Subject of the agreement

This Framework Agreement defines the general terms and conditions for the implementation of the PCP procurement of R&D services set out in Article 3 and for the Specific Contracts that will be awarded for each of the 3 PCP phases.

Article 2 — Duration

The Framework Agreement becomes effective upon signing by both parties and shall remain in effect (unless terminated in accordance with Article 16) until the Completion Date (as defined below) of Phase I or of a later Phase that has been awarded to the Contractor. However, confidentiality obligations and provisions shall remain applicable for 5 years after the end of the Framework Agreement in accordance to Article 6. Please note that Contractors who are awarded contracts for the Phases II and III shall sign a formal assignment for that particular phase.

The period of execution of the tasks may be extended only with the express written agreement of the parties before the expiration of the period for execution of the tasks.

Article 3 — R&D services to be provided

The contractor shall provide the R&D services (tasks, deliverables and milestones) to develop solutions to tackle the challenge set out in the tender and the Specific Contracts.

Article 4 — Pricing, payment and accounting

The price for the R&D services to be implemented for each PCP phase will be set out in the Specific Contracts.

The prices shall be based on the binding unit prices in the tender and the following price conditions:

- if new units/unit prices are added to phase 2 or 3 offers, they shall become binding for the remaining phases
- if offered unit prices from phase 1 are changed in phase 2 and / or phase 3 offers, this should be duly notified and explained by Contractor. The next payment conditions will apply:
- 4.1 The total amount to be paid by the procurement entity to the Contractor shall not exceed the relevant amounts detailed in Section 2.8. of the PCP Request for Tenders document. Subject to these limits the Contractor is free to administer received payments within the terms of this Framework Agreement without further reference to the Procuring Entity.
- 4.2 Payment for the Contractor's Services for each Phase will be made according the following provisions:
- 4.2.1 PHASE I: payment of the Price for Phase I shall be made in two parts. The Contractor shall be paid a first payment of 50% of the Price for Phase I within 30 calendar days from the date of the decision of the Contracting Board to accept the successful completion of the interim deliverables of the Contractor to Phase I (one). The second payment of 50% shall be paid within 30 calendar Days from the date of the decision of the Contracting Board confirming that the Contractor has complied with the Performance Conditions as described in section 6.2 of the CfT

document applicable to such Phase and is thus considered to have completed the Phase satisfactorily. In case of Default, any payment already made may be reclaimed, including for the case in which the Contracting Board comes to the conclusion that Phase I was not even satisfactorily completed.

- 4.2.2 PHASE II: payment of the Price for Phase II shall be made in three parts. The Contractor shall be paid a first payment of 5% of the Price for Phase II within 30 calendar Days from the start of Phase II as an advance payment for this Phase. The second payment of 45% shall be paid within 30 calendar Days from the date of the decision of the Contracting Board to accept the successful completion of the interim deliverables of the Contractor to Phase II (two). The third payment of 50% shall be paid within 30 calendar Days from the date of the inspection and by the Contracting Board confirming that the Contractor has complied with the Performance Conditions as described in section 6.2 of the CfT document applicable to such Phase and is thus considered to have completed the Phase satisfactorily. In case of Default, any payment already made may be reclaimed including for the case in which the Contracting Board comes to the conclusion that Phase II was not even satisfactorily completed.
- 4.2.3 PHASE III: payment of the Price for Phase III shall be made in three parts. The Contractors shall be paid a first payment of 5% of the Price for Phase III within 30 calendar Days from the start of Phase III as an advance payment for this Phase. The second payment of 45% shall be paid within 30 calendar Days from the date of the decision of the Contracting Board to accept the successful completion of the interim deliverables of the Contractor to Phase III (three). The third payment of 50% shall be paid within 30 calendar Days from the date of the inspection of the Contracting Board confirming that the Contractor has complied with the Performance Conditions as described in section 6.2 of the CfT document applicable to such Phase and is thus considered to have completed the Phase satisfactorily. In case of Default, any payment already made may be reclaimed, including for the case in which the Contracting Board comes to the conclusion that Phase III was not even satisfactorily completed.
- 4.3 The Contractor accepts, upon first request from the Procuring Entity, to provide the Procuring Entity with complete, relevant and clear information as well as documentary evidence about the allocation of monies paid by the Procuring Entity.
- 4.4 Payments to third parties employed or hired by the Contractor, if any, shall remain the responsibility of the Contractor who shall ensure that such payments are made promptly and shall hold the Procuring Entity harmless against any claim of such third parties.
- 4.5 During the Project Period, payments will be made by the Procuring Entity pursuant to invoices issued to the Procuring Entity; the Procuring Entity may suspend this payment at any time if, in the view of the Procuring Entity, acting reasonably, satisfactory progress on the Project has not been maintained, or reports have not been submitted as required under Article 6.
- 4.6 Subject to the confidentiality obligations set forth in Article 6, the Contractor grants to the Procuring Entity, acting, as the case may be, through agents

authorized for that purpose, and to any statutory or regulatory auditors of the Procuring Entity, a right to access (and, if necessary to copy) the relevant financial records during normal business hours.

- 4.7 The Contractor shall provide all reasonable assistance at all times during the term of the Agreement and during a period of ten years after termination or expiry of this Agreement for any reason whatsoever, for the purposes of allowing the Procuring Entity to obtain such information as is necessary to fulfil the Procuring Entity's obligations to supply information for national or supra- national parliamentary, governmental, judicial or other administrative purposes and/or to carry out an audit of the Contractor's compliance with this Agreement including all activities, performance, security and integrity in connection therewith.
- 4.8 If at any time an overpayment has been made to the Contractor for any reason whatsoever, the amount of such overpayment shall be considered when assessing any further payments, or shall be recovered from the Contractor at the Procuring Entity's discretion.
- 4.9 The Contractor shall keep and maintain, up until at least ten years after this Agreement has been completed, full and accurate records of the Project including:
 - 4.9.1 all aspects of the Project;
 - 4.9.2 all expenditure paid by the Procuring Entity; and
 - 4.9.3 all payments made by the Procuring Entity, and the Contractor shall allow upon request by the Procuring Entity or the Procuring Entity's representatives such access to those records as may be required in connection with the Agreement.
- 4.10 Where the Contractor enters into a Sub-Contract with a supplier or Contractor for the purpose of performing the Contract, it shall cause a term to be included in such a Sub- Contract that requires payment to be made of undisputed sums by the Contractor to the Sub- Contractor within a specified period not exceeding 30 calendar Days from the receipt of a valid invoice, as defined by the Sub- Contract requirements.
- 4.11 Wherever, under the Contract, any sum of money is recoverable from or payable by the Contractor (including any sum that the Contractor is liable to pay to the Procuring Entity in respect of any breach of the Contract), the Procuring Entity may unilaterally deduct that sum from any sum then due, or which at any later time may become due to the Contractor under the Contract or under any other agreement with the Procuring Entity.
- 4.12 The Contractor shall make any payments due to the Procuring Entity without any deduction whether by way of set-off, counterclaim, discount, abatement or otherwise, unless the Contractor has a final and enforceable court order requiring an amount equal to such deduction to be paid by the Procuring Entity to the Contractor.
- 4.13 The Procuring Entity presume that the intention is to prevent abnormal price offers, price estimation for research prices, and calculations of future market price

of solutions. In case of suspicion of abnormal price offers the robustness of calculation has to be declared to the SHUTTLE consortium or advisory board.

Article 5 — Ownership of the results (foreground), pre-existing rights (background) and sideground (including intellectual and industrial property rights)

- 5.1 Rights and obligations concerning all (fore-, back- and sideground) Intellectual Property Rights.
- 5.1.1. Contractor shall take all appropriate and necessary measures to ensure the proper management of the Project Intellectual Property Rights.
- 5.1.2 Each contractor is responsible for the management (including protection) of its Intellectual Property Rights as stated in 5.1.1 and bears the costs associated with this.
- 5.1.3 If the Contractor becomes aware of any product or activity of any third party that involves or may involve infringement or other violation of the Project Intellectual Property Rights, or any other proprietary right on the Results, the Contractor shall promptly notify the Procuring Entity of the infringement or violation.
- 5.1.4 The procurers have the right to monitor the management of the IPRs.
- 5.1.5 The contractor must inform the buyers group (via the Contracting Authority) of results that can be exploited, regardless of whether they can be protected or not, within 30 days from when they are generated. The information submitted to the Contracting Authority must include information about the contents of the results, the confirmation by the contractor to protect them and the planned timing for protection.
- 5.1.6 For Results that are not IPRs, like prototypes and first products resulting from the R&D, design, prototype and first product/service specifications, simulations, data models, drawings, source code, the same rules as for IPR's will apply.
- 5.1.7 The Contractor will provide each of the SHUTTLE consortium members an irrevocable, indefinite, worldwide, royalty-free and non-exclusive license to use all Results, including Project Intellectual Property Rights and the Pre-existing rights that are needed to perform the Project for the purpose of executing the Project as well as for non-commercial research purposes, including trials set up to test the validity of the Results. In case of Results that constitute software, the non-commercial research license will extend to all updates and upgrades thereof during the trials set up to test the validity of the Results.
- 5.2 Rights and obligations concerning foreground Intellectual Property Rights.
- 5.2.1 Each contractor that generates Results owns the attached (foreground) IPRs.
- 5.2.2 If a contractor does not seek protection for results that should be protected, the buyers group has the full rights on all IPRs. The Contracting Authority will request to transfer the results and IPR to them.

- 5.2.3 The contractor grants to the buyers group irrevocable, royalty-free, non-exclusive, world-wide access rights to use the results, for their own purposes (for IPRs: until their expiry date).
- 5.2.4 The buyers group has the right to require the contractor to grant within a reasonable time period specified in the request non-exclusive licences to third parties to commercially or non-commercially exploit the results under fair and reasonable conditions, without the right to sub-license.
- 5.2.5 The contractor may grant non-exclusive licences to third parties allowing them to exploit the results (or otherwise give the right to exploit them) unless this impedes the access rights of the buyers group.
- 5.2.6 The contractor may transfer ownership of its results unless this is prohibited (or restricted) by the security obligations and provided that it ensures that its obligations (in respect of the results) apply to the new owner and that this new owner is obliged to pass them on any subsequent transfer (e.g. by including a requirement to do so in their arrangements with the new owner).
- 5.2.7 The contractor is required to deposit copies of Results (e.g. the source code and design specifications) to guarantee for the buyers group a continued access to results in case of financial bankruptcy of the contractor (or any of its subcontractors).
- Under an ESCROW agreement for Software.
- As a copy to the buyers group in case of designs, drawings, reports and specifications.
- As a copy of the original in the case of hardware (and prototype).
- 5.2.8 If a contractor wants to transfer its IPR to another party, and the procurers in the buyers group still have rights or requests regarding the IPR, the contractor must give at least 45 days prior notice of its intention to transfer ownership of the results. Furthermore, this notification must include sufficient information on the new owner to enable the procurers to assess the effects of their access rights. A procurer can object within 30 days of receiving such a notification if it is demonstrated that the transfer would adversely affect access rights and the transfer may not take place until an agreement has been reached between the parties concerned.
- 5.3 Rights and obligations concerning background and sideground Intellectual Property Rights.
- 5.3.1 The property rights of background IPRs do not change under this Framework Agreement. All Pre-existing rights remain the property of the party introducing the same (or any third party supplier that owns it) and nothing contained in this Framework Agreement or any license contract pertaining or pursuant to the Project shall affect the ownership rights of either party (or any third party) in its Pre-existing rights.
- 5.3.2 Parties must inform each other about the generation of/changes in preexisting rights and sideground within 30 days from the generation /change.

5.3.3 The contractor introducing background must within 14 days of the signing of the PCP framework agreement provide the Contracting Authority with a list of the pre-existing rights it holds and/or has access to (e.g. via its subcontractors) (at the date of the agreement) and a list of the software necessary for the operation of the prototype and first [products][services] that will be developed during the PCP, specifying which software is closed source software. An updated list (to the extent necessary) must be provided with each bid for the next phase.

The access that the parties must grant each other to each other's pre-existing rights and sideground for carrying out the tasks assigned to them in the PCP, for exploitation of results generated in the PCP and for using the results for their own purposes (normally at least to the buyers group). The conditions for access should be fair and reasonable to all parties,

- on a royalty-free, non-exclusive basis, access to each other's background, solely for carrying out the tasks assigned to them in the PCP
- under fair and reasonable conditions and on non-exclusive basis, access to each other's background, for exploitation of results generated in the PCP and for using the results for their own purposes
- under fair and reasonable conditions and on non-exclusive basis, access to each other's sideground, for carrying out the tasks assigned to them in the PCP, for exploitation of results generated in the PCP and for using the results for their own purposes.
- 5.3.4 The Contractor shall, within four (4) years after the end of the Framework Agreement, take measures to ensure that the Project Results are exploited commercially (directly or indirectly, in particular through licensing). Contractor will report on request of the Procuring Entity about the progress on the commercial exploitation of the results during the 4-year period aforementioned (max. twice per year).
- 5.3.5 If the Contractor fails to commercially exploit the Results within this period, or uses the Results to the detriment of the public interest, the Contractor shall, at Procuring Entity's request, transfer the ownership of the Results to the Procuring Entity free of costs or sub-licenses IPRs to third parties indicated by the Procuring Entity. 'Failure to commercially exploit Results' means not marketing a commercial application of the Results (directly or indirectly, through a subcontractor or licensee).
- 5.3.6 The contractor must ensure that it complies with its obligations under the framework agreement and specific contracts if it uses subcontractors; that it must obtain all necessary rights (transfer, licences or other) from subcontractors, as if they were generated by itself; that it should refrain from using subcontractors if obtaining those rights is impossible.

Article 6 — Confidentiality

The parties shall keep confidential any data, documents or other material (in any form) that is identified as confidential at the time it is disclosed. This applies during

the implementation of the Framework Agreement and Specific Contracts and up to 5 years after their end. If information has been identified as confidential only orally, it shall be considered to be confidential only if this is confirmed in writing within 15 days of the oral disclosure. The parties may disclose confidential information to their staff or to third parties involved in the PCP implementation only if:

- (a) they need to be aware of this information in order to implement the PCP activities under the Framework Agreement and Specific Contracts; and (b) they are bound by an obligation of confidentiality. The procurers may disclose confidential information to the EU if required under their Horizon 2020 grant agreement. The confidentiality obligations cease to apply if:
- (a) the disclosing party agrees to release the other party from the obligation;
- (b) the information was already known by the recipient or is given to him without obligation of confidentiality by a third party that was not bound by any obligation of confidentiality;
- (c) the recipient proves that the information was produced without the use of confidential information;
- (d) the information becomes generally and publicly available, without breaching any confidentiality obligation; or
- (e) the disclosure of the information is required by EU or national law.

This does not change the security obligations, which still apply. Stricter confidentiality obligations apply for information that is EU-classified or subject to a security recommendation.

Article 7 — Promotion, publicity and communication

7.1 The contractor shall undertake communication activities to create publicity about its participation to the procurement, and to promote the objectives and the results of the R&D carried out under the PCP.

All communication activities shall comply with the applicable confidentiality and security restrictions.

During the implementation of the contract and for a period of 5 years after the end of the contract, the contractor shall inform the Contracting Authority 28 days in advance of any (written or oral) publication or any other type of communication (in any media or form) relating to the services or results. Information on communication activities expected to have a major media impact shall be provided sufficiently in advance to allow the Contracting Authority to inform the EU.

All communication activities (including in electronic form and via social media) and infrastructure, equipment and major results financed by the PCP shall display the EU emblem and include the following text:

- for communication activities: 'This is part of the SHUTTLE project that has received funding from the European Union's Horizon 2020 Research and Innovation Programme';
- for infrastructure, equipment and major results: 'This solution is part of the SHUTTLE project that has received funding from the European Union's Horizon 2020 Research and Innovation Programme'. When displayed together with another logo, the EU emblem shall have appropriate prominence. The contractor may use the EU emblem without first obtaining approval from the EU. This does not, however, give the contractor the right to exclusive use. Moreover, the contractor may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means. All communication activities shall indicate that they reflect only the author's views.
- 7.2 The Procuring entity and the buyers group may use, for the purposes of communication and publicity, all information relating to the PCP, documents (notably summaries) and deliverables, and any other material (such as pictures or audio-visual material) from the contractor (including in electronic form). The procurers may, in particular, publish the names of the participating contractor and its project abstracts, the summaries of the main results from the R&D and the lessons learnt during the PCP (e.g. relating to the feasibility of the different approaches to meeting the procurers' requirements that were explored, and the lessons learnt for potential future use of the solutions proposed). This does not change the confidentiality obligations under Article 6. Moreover, before publishing this information, the procurers shall consult the contractor, in order to avoid harm to legitimate business interests (e.g. regarding aspects of the solutions that could be IPR-protected) or distortion of competition.
- 7.3 The EU may use, for the purposes of communication and publicity, information relating to the PCP, documents (notably summaries) and deliverables, and any other material (such as pictures or audiovisual material) from the contractor (including in electronic form). If the EU's use of these materials, documents or information would risk compromising legitimate interests, the contractor may, however, ask the Contracting Authority to request the EU not to use it. The right to use the contractor's materials, documents and information includes:
- (a) use for its own purposes (in particular, making them available to staff working for the EU (including for the European Commission, EU executive agencies, other EU institutions, bodies, offices or agencies) or for EU Member State institutions or bodies; and copying or reproducing them in whole or in part, in unlimited numbers);
- (b) distribution to the public (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or

presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);

- (c) editing or redrafting for the purposes of communication and publicity (including shortening, summarizing, inserting other elements (such as metadata, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts or using in a compilation);
- (d) translation;
- (e) giving access in response to individual requests made under EU Regulation No 1049/2001, without the right to reproduce or exploit;
- (f) storage in paper, electronic or other form;
- (g) archiving, in line with applicable rules on document management, and
- (h) authorising third parties to act on its behalf or sub-licensing the modes of use set out in points (b), (c), (d) and (f) to third parties if needed for the purposes of communication and publicity.

If the right of use is subject to rights of a third party (including the contractor's staff), the contractor shall ensure that it obtains the necessary approval from the third parties concerned.

Article 8 — Commercial exploitation of results

The contractor shall, for at least four (4) years after the end of the Framework Agreement and the Specific Contracts, take measures to ensure that its results are exploited commercially (directly or indirectly, in particular through transfer or licensing).

If the contractor fails to commercially exploit the results within this period (or uses the results to the detriment of the public interest, *including security interests*), the buyers group has the right to require that ownership of the results be transferred to them.

'Failure to commercially exploit results' means not marketing a commercial application of the results (directly or indirectly, through a subcontractor or licensee).

Article 9 — Conflicts of interest

9.1 The contractor shall take all measures necessary to prevent a situation arising where the impartial and objective implementation of the Framework Agreement or a Specific Contract is compromised for reasons involving economic interests, political or national affinity, family, personal life or any other shared interest.

The contractor shall also take all measures necessary to prevent a situation in which its (previous or ongoing) professional activities affect the impartial and objective implementation of the Framework Agreement or a Specific Contract.

9.2 The contractor shall notify the Contracting Authority without delay of any situation constituting or likely to lead to a conflict of interest (*including changes of ownership*) and shall immediately take all steps necessary to rectify this situation.

The Contracting Authority may instruct the contractor to take specific measures to remedy the situation.

Article 10 — Ethics and research integrity

- 10.1 The contractor shall carry out the tasks assigned to it in the Framework Agreement and Specific Contracts in compliance with:
- (a) ethical principles (including the highest standards of research integrity) and (b) applicable international, EU and national law.

The contractor may not:

- - carry out activities in a country outside the EU, if they are prohibited in all EU Member States or
- destroy human embryos. The contractor may not carry out activities whose aim is to:
- (a) carry out human cloning for reproductive purposes;
- (b) modify the genetic heritage of human beings in such a way as could make such changes heritable (with the exception of research relating to cancer treatment of the gonads) or
- (c) create human embryos solely for the purpose of research or for the purpose of stem cell procurement, *including by means of somatic cell nuclear transfer*.

The contractor may not carry out activities that do not focus exclusively on civil applications. The contractor shall respect the fundamental principle of research integrity — as set out in the European Code of Conduct for Research Integrity. This implies compliance with the following essential principles:

- reliability in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources;
- honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way;
- respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment;
- ➤ **accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts This means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices and refrain from the research integrity violations described in this Code.
- 10.2 Before starting any activity that raises an ethical issue, the contractor shall submit to the Contracting Authority a copy of:
 - (a) any ethics committee opinion required under national law and
 - (b) any notification or authorisation for activities raising ethical issues required under national law.

Article 11 — Security-related obligations

- 11.1 Activities involving dual-use goods or dangerous materials and substances shall comply with applicable EU, national and international law. Before starting the activity, the contractor shall provide the Contracting Authority with a copy of any export or transfer licences required.
- 11.2 Classified information shall be treated in accordance with the security aspect letter (SAL) annexed to the H2020 grant agreement and EU Decision No 2015/444 until it is declassified. Tasks involving classified information may not be subcontracted without prior written approval from the Contracting Authority. The contractor shall inform the Contracting Authority of any changes relating to security and, if necessary, request an amendment.

Article 12 — Processing of personal data

- 12.1 The Contracting Authority and the buyers group shall process personal data in compliance with the applicable EU and national law on data protection.
- 12.2 The contractor shall process personal data in compliance with the applicable EU and national law on data protection (including as well information that relates to authorisations and notification requirements).
- 12.3 The contractor may grant its staff access to data only in so far as it is strictly necessary for implementing, managing and monitoring the Framework Agreement and Specific Contracts.
- 12.4 The contractor must inform the staff whose personal data are collected and processed by the procurers and/or the EU. For this purpose, the contractor must provide them with the privacy statements of the procurers and the EU, before transmitting their data. If explicit prior consent from the data subjects is needed, the contractor must obtain such a consent.

Article 13 — Obligation to provide information and keep records

- 13.1 The contractor must, at any time during the implementation of the Framework Agreement and Specific Contracts or afterwards, provide any information requested by the Contracting Authority or the buyers group in relation to the Framework Agreement or related contracts concerning the commercialisation of the Results.
- 13.2 The contractor must keep, for a period of up to 10 years after the end of the Framework Agreement and Specific Contracts, records and other supporting documentation relating to their implementation.

This obligation includes records and other supporting documentation on scientific and technical implementation (in line with the accepted standards in the field) and on the price charged and the costs incurred by the contractor.

The contractor must keep the original documents. Digital and digitalised documents are considered originals if they are authorised under national law.

Should there be ongoing checks, reviews, audits, investigations, litigation or other pursuits of claims (including claims by a third party against the procurers), the contractor must keep all records and other supporting documentation until the end of these procedures.

Article 14 — EU checks, reviews, audits and investigations

Should the EU (including the European Court of Auditors or the European Anti-Fraud Office (OLAF)) decide to carry out a check, review, audit or investigation, the contractor must make available all information, records and other supporting documents relating to the implementation of the Framework Agreement and Specific Contracts.

Should there be a visit on-the-spot, the contractor must allow access to its premises and must ensure that the information requested is readily available.

Article 15 — EU impact evaluation

Should the EU carry out an impact evaluation (of its grant to the procurers), the contractor must make available all information, records and other supporting documents relating to the implementation of the Framework Agreement and Specific Contracts.

Article 16 — Breach of contract / Termination

- 16.1 Without prejudice to any other provision of this Framework Agreement, this Framework Agreement may be terminated by either party giving three months' notice in writing to the other, unless the time remaining to the end of the relevant Phase is less than three Months, in which case the notification time shall be all the remaining time till the end of that Phase. Should the option to terminate be exercised by the Procuring Entity, it shall indemnify the Contractor from and against all and any actual loss unavoidably incurred by reason or in consequence of the termination provided that the Contractor takes all immediate and reasonable steps to minimize the loss.
- 16.2 With regards to Article 16.1, the Procuring Entity will not pay any amount which will exceed the total sums which otherwise should have been paid under this Framework Agreement once the Contractor had fulfilled its obligations under the Agreement.
- 16.3 The Procuring Entity may at any time and from time to time by formal notification terminate this Framework Agreement without liability for any damage, loss or expenses arising as a result of or in connection with such termination if there is a change of control in the Contractor which the Procuring Entity can reasonably demonstrate is prejudicial. The Procuring Entity shall only be permitted to exercise its rights pursuant to this clause for 6 (six) months after any such change of control and shall not be permitted to exercise such rights where the Procuring Entity has agreed *a priori* in writing to the particular change of control and such change of control takes place as proposed. The Contractor shall notify the Procuring Entity within 2 (two) weeks if a change of control takes place.
- 16.4 The Procuring Entity may at any time and from time to time by formal notification terminate this Framework Agreement without liability for any damage, loss or expenses arising as a result of or in connection with such termination if:
- any approvals consent or licenses required under this Framework Agreement are not given unconditionally within 6 (six) months of the commencement of the Project Period;

- the Contractor is subject to an Insolvency Event;
- any provision of this Framework Agreement (other than as previously specified in the preceding provisions of this Article 24) expressly entitles the Procuring Entity to terminate this Framework Agreement; the Contractor, or any sub-Contractor on whose resources he has relied in the procurement that has preceded this Framework Agreement, becomes subject to any exclusion criteria listed in the PCP Request for Tender document;
- the Services are not in compliance with requirements on Research and development Services as defined in the most recent version of the Frascati Manual (Proposed Standard Practice for Surveys on Research and Experimental Development OECD, 6th Edition, 2002, ISBN 978-92-64- 19903-9, pp 29-50) and, where applicable its latest annexes or in case of non-compliancy with any other requirement mentioned in the PCP Request for Tender document and declared in the signed declaration that is part of the tender.
- 16.5 Termination of this Framework Agreement by the Procuring Entity under the preceding provisions of this Article 16 shall (at the option of the Procuring Entity) terminate this Framework Agreement with immediate effect as from the date of service of the notice of that termination or from the expiry of a period (not exceeding 6 (six) Months) specified in that notice.
- 16.6 The contractor must compensate the Contracting Authority and the buyers group if they are held liable by the EU for damage it sustained as a result of the implementation of the Framework Agreement or a specific contract or because it was not implemented properly.
- 16.7 The EU cannot be held liable for any damage caused to the contractor or caused by the contractor in connection with the implementation of the Framework Agreement or a specific contract.

Article 17 — Amendments

- 18.1 If at any time, it appears likely that any provision of the Agreement or the Project, needs to be amended, the Contractor shall immediately inform the Procuring Entity requesting in writing a Variation to the Agreement, giving full details of the justification for the request and giving proposals for the Variation to the Agreement. Upon receipt of such a request the Procuring Entity may:
- 18.1.1 agree to amend the Agreement provided such Variation is non-discriminatory and does not amount to a substantial change of the Agreement, the scope of services or the scope of the Results, as allowed following the existing case-law of the European Court of Justice;
- 18.1.2 amend the Project in a manner which the Contractor agrees can be carried out within the Project Period and within the Price with regard to the relevant Phases;
- 18.1.3 refuse the request and require the continuation of the Project in accordance with the Framework Agreement.

Article 18 — Interpretation

- 19.1 The terms set out in the framework agreement have precedence over those in annexes.
- 19.2 The terms set out in Annex 1 have precedence over those set out in Annex 2 (contractor's tender).
- 19.3 The same applies to the specific contracts.

Article 19 — Subcontracting, Transfer, Assignment & Interpretation

- 20.1 The Contractor will allow the Commission, the European Court of Auditors (ECA) and the European Anti-fraud Office (OLAF) to exercise their rights under Articles 22 and 23 Grant Agreement (*mutatis mutandis*) and will comply with Articles 17.1, 18, 34, 35, 37, 36, 38, 39 and 46 Grant Agreement (*mutatis mutandis*).
- 20.2 The Contractor will ensure that in all Sub-Contracts the conditions from the Grant Agreement set out in the above clause 20.1 are imposed upon the subcontractor.
- 20.3 A third party may replace a Contractor or a member of the Contractor in case of a consortium activity as a result of universal succession in the position of the Contractor following corporate restructuring, including takeover, merger, acquisition or in an Insolvency Event, provided that the third party meets all exclusion, selection, compliance and minimal technical criteria and the succession does not entail a substantial modification.
- 20.4 The Contractor is allowed to replace a subcontractor, provided that the new subcontractor meets all exclusion, selection, compliance minimal technical criteria and the replacement does not entail a substantial modification.
- 20.5 The Framework Agreement constitutes the entire agreement between the parties relating to its subject matter. Each party acknowledges that it has not entered into this Framework Agreement on the basis of any warranty, representation, statement, agreement or undertaking except those expressly set out in this Framework Agreement. Each party waives any claim for breach of this Framework Agreement, or any right to repeal this Framework Agreement in respect of, any representation which is not stated in this Framework Agreement. However, this Article does not exclude any liability which either party may have to the other (or any right which either party may have to repeal this Framework Agreement) in respect of any fraudulent misrepresentation or fraudulent concealment prior to the execution of this Framework Agreement. In case of discrepancy between the Framework Agreement, on the one hand, and the PCP Request for Tender Document, on the other hand, the documents shall prevail in the following order:
 - Framework Agreement;
 - PCP Request for Tender Document;
 - Other Tender Documents; and
 - Contractor's Tender in the Tendering Stage.

Article 20 — Applicable law and dispute settlement

This Framework Agreement and the specific contracts are governed by the Greek Law. The place of jurisdiction shall be the competent court of Athens. Any legal claim, petition or application for judicial review, with regard to the present procurement procedure, shall be made in Greece. By submitting a tender, the Contractor accepts the exclusive jurisdiction of Greek courts.

Article 21 — Entry into force

This Framework Agreement shall enter into force between Parties on the day on which KEMEA has received a signed duplicate of this Agreement of the authorized representative of each of the Parties.

SIGNATURES

The Contracting Authority signs for the buyers group and — in case of joint tenders — the lead contractor for the group of contractors.

ANNEX E

PCP Specific contract for phase [1][2][3]

This is a Contact between the following parties: on the one part,

the "Contracting Authority", KENTRO MELETON ASFALEIAS (KEMEA), established in P KANELLOPOULOU 4 ST, ATHINA 10177, Greece.

acting in the name and on behalf of the procurers in the buyers group (together with the Contracting Authority: "procurers"):

- -MINISTERE DE L'INTERIEUR (MININT), and its two forensic laboratories: Forensic and Criminal Intelligence Agency of the French Gendarmerie (MININT-IRCGN) and Forensic laboratory of the French national police (MININT-INPS), France
- -Netherlands Forensic Institute (NFI), The Netherlands,
- -Lietuvos Teismo Ekspertizes Centras (LTEC), Lithuania,
- -Ministério da Justiça (PJ) Forensic laboratory of the Judicial police, Portugal
- -Ministry Of Public Security Israel National Police (MOPS INP), Israel.

and on the other hand, the "contractor", [insert details of the contractor],

[OPTION for joint tenders: acting in the name and on behalf of the other members of group of tenderers:

1. [insert the details of the members of the group of tenderers]

2.

The members of the group of tenderers are hereafter collectively referred to as "the contractor" and will be jointly and severally liable *vis-à-vis* the Contracting Authority for the performance of this Contract.

The Contracting Authority, buyers group and the contractor(s) shall be referred to together as "parties", unless otherwise specified.

By signing this Contract the parties agree to implement the pre-commercial procurement in accordance with the Contract and all the obligations set out.

TERMS AND CONDITIONS

Article 1 — Subject of the contract

This Specific Contract defines the specific terms and conditions for the implementation of the PCP procurement of R&D services set out in Article XX — for the $[1^{st}][2^{rd}][3^{rd}]$ PCP phase.

Article XX — Duration

Article XX — R&D services to be provided

Article XX — Price and payment arrangements

The price to be paid by KEMEA for the R&D services set out in Article XX shall be [EUR][other currency] [amount in figures and in words].

Article XX — Security related obligations

Article XX — Entry into force

SIGNATURES

The Contracting Authority signs for the buyers group and — in case of joint tenders — the lead contractor for the group of contractors.

ANNEX F

Technical Offer

- This form is related to the technical offer for Phase 1/2/3. Each section is required and shall be completed as stated below. Please, note that specific description should be done to implement Phase 1/2/3 of the SHUTTLE PCP.
- The Tenderer should upload an attachment with the required response to each technical section.
- You may use as many pages as needed.

Part 1

A technical plan that outlines: 1. the tenderer's idea for addressing all the requirements given in the PCP challenge description, relating both to functionality and performance; and 2. technical details of how this would be implemented

Part 2

A draft business plan that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market

Part 3

A list of the pre-existing rights (background) relevant to the tenderer's proposed solution, in order to allow IPR dependencies to be assessed

Part 4

A risk assessment and risk mitigation strategy

Part 5

"Does this tender involve ethical issues? (YES/NO)"

if YES, an ethics self-assessment should be provided, with explanations on how the ethical issues will be addressed

Part 6

"Does this tender involve: activities or results that may raise **security issues** and/or **EU-classified information** 19 as background or results? (YES/NO)" if YES, relevant information should be provided on how these issues will be addressed

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¹⁹ See <u>Decision 2015/444/EC, Euratom</u> on the provisions on security of EU-classified information.

Single Tenderer / Lead Tenderer confirmation Statement: The contact person being the authorised signatory of the above Tenderer hereby declare that I, or my company, provided accurate information.

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ANNEX G

Financial Offer and Cost Breakdown

The purpose of this Annex is to provide the Buyers Group with:

- A) A fixed total Price for Phase 1, broken down to show unit prices and the number of each unit needed to carry out phase 1 (given in euros, excluding VAT but including any other taxes and duties).
- B) and set binding unit prices for the entire duration of the Framework Agreement.
- C) An estimated total price for phases 2 and 3

For the above purpose a Total Cost and a Cost Breakdown shall be submitted.

Financial Offers which are not submitted using this Annex will be excluded. All six sections of this document must be presented. Tenderers should however add further fields (rows and columns) with additional cost elements, as needed. Full justifications and details must always be provided.

Declaration

The Lead Tenderer is assumed to have discussed the tender within their own company and any other body whose co-operation will be required to deliver the project.

The Lead Tenderer will need to obtain consent from an authorised officer or appropriate signatory who will sign the contract if successful. The contract is a legally binding document and subject to the outcome of this competition.

By submitting the Tender, including Annex F, you are confirming that the information given in this application is complete, that you are actively engaged in this project and responsible for its overall management and agree to administer the contract if made.

You are confirming that

- your organisation is prepared to carry out this project at the stated price,
- you are not subject to the Exclusion criteria, and
- that the services offered are within Research and Development as mentioned, and
- that you comply with the Compliance criteria stated in the SHUTTLE Request for Tenders.

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GENERAL INSTRUCTIONS - Mandatory reading

Please read section of 4.4 'Financial Section of the Tender' of the Request for Tenders .

Tenderers must specify binding unit prices for all items needed for carrying out Phase 1 and for items that are expected to be needed for Phases 2 and 3 (given in euros, excluding VAT, but including any other taxes and duties).

Tenderers must quote binding unit prices for each category of R&D resources needed, e.g. junior, senior researchers, developers, product owner, testers, etc. (hourly rates) and specify other costs. Tenderers must also quote binding unit prices for their own resources for Phases 2 and 3 that are not expected to be used in Phase 1 and quote estimated unit costs for resources of third parties to be used in Phases 2 and 3.

The unit prices quoted for each category of items remain binding for all Phases (i.e. for the duration of the Framework Agreement).

Tenderers must provide a cost breakdown for Phase 1, resulting in a fixed total price for Phase 1 and an estimated total price for Phases 2 and 3 broken down to show unit prices and the number of each unit needed to carry out the Phases (given in euros, excluding VAT, but including any other taxes and duties).

The Cost Breakdown shall provide:

- 1 a % of the labour price allocated to R&D services. Note that the price must comply with the R&D definition and the total sum of the material/equipment/other Costs offered in each Phase must be less than 50 % of the total value of Total Price of each Phase)
- 2 the location or country in which the different categories of activities are carried out (e.g. x hours of senior researchers in country L at a euro/hour; y hours of junior developers in country M at b euro/hour). Demonstrate compliance with the compliance criteria related to the place of performance.
- **3** a financial compensation valuing the transfer of ownership of the IPRs generated during the PCP to the Tenderer, by giving an absolute value for the price reduction between the price offered in the tender compared to the exclusive development price (i.e. the price that would have been quoted if the IPR ownership would have been kept by the Buyers Group).

The financial compensation for IPRs must reflect the market value of the benefits received (i.e. the opportunity that the IPRs offer for commercial exploitation) and the risks assumed by the contractor (e.g. the cost of maintaining IPRs and bringing the products onto the market).

To ensure that a fair market price is offered, Tenderers must state two prices:

- 1 the "virtual" price that they would have quoted if all Intellectual Property Rights, including the ownership of results under the PCP, would be fully retained by the Buyers Group and tenderers would not have the possibility to exploit the results; and
- the "actual" price that takes into account the fact that the Tenderers keep ownership of the Intellectual Property Rights attached to the results under PCP, in accordance with the provisions of the contracts, and that they can exploit these results.

Note that the price must comply with the R&D definition and the total sum of non Personnel costs (such as material/Travelling/Subcontracting/Other costs) offered in each Phase must be less than 50 % of the total value of Total Price of each Phase.

Actual prices quoted for each phase must respect the maximum budgets specified per Contractor per each Phase. All offers above those amounts shall be excluded from the process.

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COST BREAKDOWN - Phase 1: Solution Design (Binding)

Provide the cost breakdown for your proposed solution for Phase 1.

Гуре	A. Personnel costs	Description of activities	Price per hour	Amount of hours	Total price	% of labour allocated to R&D services	Country or location of performance	Actual Price
A.1	[e.g. Senior Researcher - 1]	[link to proposed work activities]				[e.g. 100%]		
A.2	[e.g. Senior Researcher - 2]	activitiesj				[e.g. 100%]		
A.3	Commercial representative - 1					[e.g. 0%]		
					> add rows as	needed		
	S	ub-Total Personnel costs		0,0				€
Tuna	B. Materials & Equipments	Description of activities			Virtual Pric	e		Actual Price
ype	b. Waterials & Equipments	Description of activities	Unit price	Amount	Total price			ActualTitle
B.1	[e.g. Hardware, licenses, storage,]							
B.2								
B.3								
					> add rows as	needed		
	Sub-Total	Materials & Equipments		0,0	- €			€
			Virtual Price					
Туре	C. Subcontracting	Description of activities	Unit price	Amount	Total price		location of mance	Actual Price
		[link to proposed work						
C.1	[e.g. Graphic designer]	activities]						
					> add rows as	needed		
	S	ub-Total Subcontracting		0,0	•			€
					Virtual Pric	e		
Гуре	D. Other costs	Description of activities	Unit price	Amount	Total price			Actual Price
D.1	[Travel cost]							
D.2	[General and administration costs (overheads)]							
D.3								
		Cub Tatal Other as at		0,0	> add rows as	needed		€
		Sub-Total Other costs		0,0	- €			E
			Phase	1 TOTAL C	osts			
Virtual Price (exc. VAT)								
							rice (Exc. VAT)	

Comments, clarifications and remarks

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COST BREAKDOWN - Phase 2: Solution Prototype (Estimated)

Provide envisioned cost breakdown for your proposed solution for Phase 2. Only unit prices are binding. Overall resources are merely estimations.

This information will be used to check if you are indeed proposing R&D Services. It will also be used for the overall Tender evaluation.

				Virtual Price				
ype	A. Personnel costs	Description of activities	Price per hour	Amount of hours	Total price	% of labour allocated to R&D services	Country or location of performance	Actual Price
A.1	[e.g. Senior Researcher - 1]	[link to proposed work activities]				[e.g. 100%]		
4.2	[e.g. Senior Researcher - 2]					[e.g. 100%]		
A.3	Commercial representative - 1					[e.g. 0%]		
					> add rows as	needed		
	S	ub-Total Personnel costs		0,0	- €			€
ype	B. Materials & Equipments	Description of activities	Unit price	Amount	Virtual Price	e		Actual Price
В.1	[e.g. Hardware, licenses, storage,]		·		•			
B.2	•							
B.3								
					> add rows as	needed		
	Sub-Total	Materials & Equipments	5 0,0 - € €			€		
ype	C. Subcontracting	Description of activities	Virtual Price Unit price Amount Total price Country or location of		Actual Price			
		first as a second second	ome price	Amount	Total price	perfor	mance	
	[e.g. Graphic designer]	[link to proposed work activities]						
					> add rows as	needed		
		Sub-Tatal Cub-santus ations				needed		€
	3	Sub-Total Subcontracting		0,0				ŧ
ype	D. Other costs	Description of activities	Unit price	Amount	Virtual Price Total price	e		Actual Price
0.1	[Travel cost]							
D.2	[General and administration costs (overheads)]							
D.3								
					e and a const			
		0.1.7.1.7.1			> add rows as	пееаеа		
		Sub-Total Other costs		0,0	- €			€
		Ph	ase 2 TOT	AL Costs - E	estimate d			
Virtual Price (exc. VAT)								
	Actual Price (Exc. VAT)							
						Actual Price	(inc. 24% VAT)	

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Comments, clarifications and remarks

COST BREAKDOWN - Phase 3: Operational Validation(Estimated)

Provide envisioned cost breakdown for your proposed solution for Phase 3. Only unit prices are binding. Overall resources are merely

This information will be used to check if you are indeed proposing R&D Services (see Section 3.5 of the Request for Tenders, TD1). It will also be used for the overall Tender evaluation.

				Virtual Price				
Гуре	A. Personnel costs	Description of activities	Price per hour	Amount of hours	Total price	% of labour allocated to R&D services	Country or location of performanc e	Actual Price
A.1	[e.g. Senior Researcher - 1]	[link to proposed work activities]				[e.g. 100%]		
A.2	[e.g. Senior Researcher - 2]					[e.g. 100%]		
A.3	Commercial representative - 1					[e.g. 0%]		
					> add rows as	needed		
	<u> </u>	Sub-Total Personnel costs		0,0	- €			€
					Virtual Price			
Гуре	B. Materials & Equipments	Description of activities	Unit price	Amount	Total price			Actual Price
B.1	[e.g. Hardware, licenses, storage,]							
B.2								
B.3 								
					> add rows as	l needed		
	Sub-Tota	Materials & Equipments		0,0				€
		, , , , , , , , , , , , , , , , , , ,	Virtual Price					
уре	C. Subcontracting	Description of activities	Unit price	Amount	Total price	Country or perfori		Actual Price
C.1	[e.g. Graphic designer]	[link to proposed work activities]				,		
					> add rows as	needed		
	9	Sub-Total Subcontracting		0,0	- €			€
уре	D. Other costs	Description of activities	Unit price	Amount	Virtual Price Total price			Actual Price
D.1	[Travel cost]							
D.2	[General and administration costs (overheads)]							
D.3	costs (overneaus)]							
					> add rows as	needed		
		Sub-Total Other costs		0,0	- €			€
		Di-	aa 2 TOTA	Costs Fr	tive et e d			
		Pha	se 3 TOTA	L Costs - Es	umated	Virtual Bri	ce (exc. VAT)	
Actual Price (Exc. VAT) Actual Price (inc. 24% VAT)								

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ANNEX H BACKGROUND IPRs

1) MINISTERE DE L'INTERIEUR (MININT)

As to MINISTERE DE L'INTERIEUR (MININT), it is agreed between the Parties that, to the best of their knowledge no data, know-how or information of MINISTERE DE L'INTERIEUR (MININT) shall be Needed by another Party for implementation of the Project (Article 25.2 Grant Agreement) or Exploitation of the other Party's Results (Article 25.3 Grant Agreement).

2) NETHERLANDS FORENSIC INSTITUTE (NFI)

As to NETHERLANDS FORENSIC INSTITUTE (NFI), it is agreed between the Parties that, to the best of their knowledge, the following background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions shall be as mentioned hereunder:

Describe Background	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for Exploitation (Article 25.3 Grant Agreement)
Prototype of automatic microscope developed, including acquisition algorithms	Royalty free access if used within the scope of the project	Royalty free access if used within the scope of the project. Other conditions may apply if used outside the scope GPL for core (back-end) implementation planned (not yet decided on). UI tools, such as forms, reports may be commercially exploited
Prototype of image processing algorithms developed	LGPL for core (back-end) implementation planned (not yet decided on). UI tools, such as forms, reports may be commercially exploited Royalty free access to	LGPL for core (back-end) implementation planned (not yet decided on). UI tools, such as forms, reports may be commercially exploited

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	the calculations and source	
Patent on polarisation setup in the developed setup	Royalty free access if used within the scope of the project	Royalty free access if used within the scope of the project. Other conditions may apply if used outside the scope
Validation study on high grade transparent tapes in progress	Free access to results of validation study	Access to results (publication planned)
Initial work on a database architecture that can store data from the developed instrument and integrate this with results from other techniques	LGPL for core (back-end) implementation planned (not yet decided on). UI tools, such as forms, reports may be commercially exploited	LGPL for core (back-end) implementation planned (not yet decided on). UI tools, such as forms, reports may be commercially exploited

3) KENTRO MELETON ASFALEIAS (KEMEA)

Asto KENTRO MELETON ASFALEIAS (KEMEA), it is agreed between the Parties that, to the best of their knowledge, the following background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions shall be as mentioned hereunder:

Describe Background	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for Exploitation (Article 25.3 Grant Agreement)
Tender material protected by copyright. Know-How and documentation (including electronic documents). Copyright materials 2016-2018: - Tender guidelines for collaborative project 2016	Royalty free access for the Project participants only for carrying out the work within the project.	For use outside the Project: licences under commercial conditions are mandatory

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- Tender documentation	
2017	
-Tender documentation 2018	

Based on the MoC signed between the Hellenic Police and KEMEA and the letter of participation of the Hellenic Police for the SHUTTLE project:

As Hellenic Police it is agreed between the Parties that, to the best of their knowledge no data, know-how or information of Hellenic Police shall be needed by another Party for implementation of the Project (Article 25.2 Grant Agreement) or Exploitation of that other Party's Results (Article 25.3 Grant Agreement).

4) LIETUVOS TEISMO EKSPERTIZES CENTRAS (LTEC)

As to LIETUVOS TEISMO EKSPERTIZES CENTRAS (LTEC), it is agreed between the Parties that, to the best of their knowledge no data, know-how or information of LTEC shall be needed by another Party for implementation of the Project (Article 25.2 Grant Agreement) or Exploitation of that other Party's Results (Article 25.3 Grant Agreement).

5) Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory (LPC-PJ)

As to Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory (LPC-PJ), it is agreed between the Parties that, to the best of their knowledge, the following background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions shall be as mentioned hereunder:

Describe Background	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for Exploitation (Article 25.3 Grant Agreement)
The Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory (LPC-PJ) as a highly experianced end user, will contribute to the project its vast knowledge, expertese and an operational	All required background will be delivered in accordance to the legal restricitons and limitations of the Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory (LPC-PJ).	All required background will be delivered in accordance to the legal restricitons and limitations of the state of Ministério da Justiça (Polícia Judiciária) Judiciary Police - Scientific Police Laboratory (LPC-PJ).

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platform for the benef	fit	
of the project.		

6) MINISTRY OF PUBLIC SECURITY - ISRAEL NATIONAL POLICE (MOPS - INP)

As to MINISTRY OF PUBLIC SECURITY – ISRAEL NATIONAL POLICE (MOPS - INP), it is agreed between the Parties that, to the best of their knowledge, the following background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions shall be as mentioned hereunder:

Describe Background	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for Exploitation (Article 25.3 Grant Agreement)
The MOPS - INP as a highly experienced enduser, will contribute to the project its vast knowledge, expertise and an operational platform for the benefit of the project.	All required background will be delivered in accordance with the legal restrictions and limitations of the state of Israel, Ministry of Public Security and Israel National Police.	All required background will be delivered in accordance with the legal restrictions and limitations of the state of Israel, Ministry of Public Security and Israel National Police.

The framework agreement will contain a provision that describes in more detail the rights and obligations of the different parties regarding the pre-existing rights and results.

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ANNEX I

End of Phase Report Results & conclusions

Contactors

1. The innovative solution

Provide a short description (that is suitable for publication purposes) of:

The innovative solution (in its current form)

Where exactly lies the innovation in the solution: In which ways and to which extent does the solution go beyond what existing solutions can achieve?

The degree of innovation: indicate if your innovative solution is (a) a totally new product / service / process / method; (b) an improvement to an existing product / service / process / method; (c) a new combination of existing products / services / processes / methods and (d) a new use for existing products / services / processes / methods).

2. Commercialisation success

Provide a short description (mark parts that are not suitable for publication purposes) of:

How mature is the innovative solution in terms of its readiness to commercialise widely: Which steps towards wide scale commercialisation have been completed so far? (do not forget: IPR protection, certification, CE marking, attracting additional investors to grow the business, setting up sales / distribution channels / marketing activities to expand sales to other countries etc.)

What is the current commercialisation success of the solution: e.g. awards / other forms of recognitions obtained, sales / increase in market share already achieved, licensing agreements already concluded, collaboration agreements with other partners (e.g. retailers) to commercialise the solutions already signed, additional investments attracted to further commercialise the solution.

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3. Other benefits obtained

Provide a short description (mark parts that are not suitable for publication purposes) of any other benefits that you obtained from participating in the procurement, e.g.

Getting easier access to (a new segment of) the public procurement market (e.g. did the procurement enable you to work with procurers/end-users that you were not working with beforehand?)

Growing your business across borders and/or to other markets (e.g. private markets) due to to the first customer references provided by the procurement

Shortening the time-to-market for your innovation due to to early customer/end-user feedback

Other benefits / lessons learnt: complete if applicable

4. Business growth

Provide a short description (mark parts that are not suitable for publication purposes) of:

How much has your business already grown during the procurement?

In terms of (a) personnel growth; (b) turnover growth; (c) growth in market share etc.

What are the prospects to grow your business via wider commercialisation of the solution:

- 1. How large is the potential market for your solution? is it a growing / steady / declining market?
- 2. By when can commercialisation start (now / in 1 / in 3 / in 5 / in more than 5 years)?
- 3. Is competition patchy (no major players) / established (but no comparable offering) / fierce?

Which future steps do you plan to take to further grow your business? (e.g. attracting additional investors to grow your business, mergers / acquisitions / joint ventures / spin-offs / IPO, setting up sales / distribution channels / marketing activities, expanding to other countries etc.)

5. Final remarks (not for publication purposes, to assess how further EU support could best help you)

What are the remaining bottlenecks to commercialise your solution? (e.g. certification, legislation etc.)

What type(s) of assistance do you need to address those bottlenecks and grow your business / commercialise your solution more widely? (e.g. EU regulation on x, finding investors, IPR help etc.)

How important was the procurement for your business? (Would/could you have done it on your own?)

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ANNEX G

[PCP Phase 1][PCP Phase 2][PCP Phase 3] Contractor details & project abstracts

Document type	Deliverable
Document version	Final
Document Preparation Date	[complete]
Classification	Public
Author(s)	All project partners
File Name	[Project Name] [PCP Phase 1] [PCP Phase 2] [PCP Phase 3] — Contractor details and project abstracts

For PCPs: complete this table for each contractor that was awarded a PCP Phase 1, 2 or 3 contract.

Contactor Details	Type/ size of legal entity	Place of performance of contract activities	Logo
Main contractor Name legal entity Address legal entity Name contact person Phone nr contact person E-mail address contact person	SME, larger company, natural person, university / research institute, other	% of contract value allocated to main contractor: [complete] % % of activities for the contract performed by the main contractor in EU Member States or countries associated with Horizon 2020: [complete] %	Main contractor logo
Other consortium member(s) (if applicable) Name legal entity Address legal entity Name contact person Phone nr contact person E-mail address contact person Complete as many times as there are other consortium members	SME, larger company, natural person, university / research institute, other	% of contract value allocated to contractor [x]: [complete] % % of activities for the contract performed by contractor [x] in EU Member States or countries associated with Horizon 2020: [complete] %	Other contractor(s) logo(s)

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Subcontractors (if applicable) Name legal entity Address legal entity Name contact person Phone nr contact person E-mail address contact person Complete as many times as there are subcontractors	SME, larger company, natural person, university / research institute, other	% of contract value allocated to subcontractor [x]: [complete] % % of activities for the contract performed by subcontractor [x] in EU Member States or countries associated with Horizon 2020: [complete] %	Subcontractor(s) logo(s)
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Project abstract (+/- 1000 characters maximum)

[Add an abstract of the winning tender, giving a brief project description agreed with the contractor that is suitable for publication purposes]

Previous EU funding

Is the project based on / a continuation of R&D activities that were previously funded by the EU?: YES/NO If yes, identify this EU funding: [name EU funding programme] — [project name] — [grant number]

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ANNEX K

USE CASES

In this ANNEX L, the three (3) different SHUTTLE Use Cases are analyzed. The Use Cases are based on specific descriptions delivered by the consortium partners.

These Use Cases are generic and will be used as a reference for the Implementation and Operational Validation of the SHUTTLE Solutions. These Use Cases explain how the SHUTTLE consortium intends to implement the toolkit into the forensic practise. These examples do not cover all aspects of the toolkit. Also, the scenarios include elements that may not be implemented during the current project. It is e.g. not foreseen that the SHUTTLE toolkit will be in use at non-specialised police laboratories during the project. Also, the implementation of a national or international database is not yet planned. However, the SHUTTLE toolkit to be developed should be prepared for these features.

They will be updated and defined in more detail, during the Phase 1 and Phase 2 of the contract. Moreover, it is stated that although a final version of the Use Cases must be delivered before the Phase 3 of the contract (in the Call off documentation of Phase 3), this version shall be subject to "last minute" changes whether due to the legislation regulating the end users' competences, the time available to conclude the evaluation and the level of cooperation with the relevant authorities etc. These changes shall not result in financial compensation or further delays in the scheduled delivery of the Use Cases as provided in the contract.

Use Case 1 Revenge

An unknown man is found dead in a quiet, residential area late in the evening. His clothing is recovered and tape lifts or other lifting systems by the police to collect microtraces. The tape lifts or other lifting systems are used and analysed in the next hours by the SHUTTLE microscope that has been acquired by the police station. The police laboratory worker is not specialised in trace evidence but has been trained to use the SHUTTLE microscope. The images are automatically saved in a national database, and a trace evidence examiner in the national forensic laboratory evaluates the data. Many pieces of glass are found on the clothing. Most of these are so small that they can hardly be seen by bare eye. Also, many black fibre traces have been recovered from the man's coat. The origin of these fibres is unknown, but their location and distribution indicate that they originate from an attacker. The police assumes that the incident may be related to a burglary a few blocks from the place where the victim was found. Policemen recover shards of glass originating from the broken window. During this investigation, they also note the black sweater of the inhabitant. The tape lifts or other lifting systems, shards and the sweater are all sent to the forensic lab for further study. The analyst isolates a number of glass particles from the tape lifts or other lifting systems: the SHUTTLE toolkit can classify glass, but not discriminate between glass from different sources. Isolation is however straightforward, as the coordinates of the particles are stored in the dataset

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acquired by the police. Some reference fibres ('known material) from the sweater are also analysed by the SHUTTLE toolkit. The analyst compares the properties of the fibres from the sweater and those on the tape lifts or other lifting systems, and finds they match in all investigated aspects. In addition, glass comparison also results in a match. Confronted with this information, the owner of the sweater admits that he chased a burglar that had entered his house, caught him, and kicked him until he collapsed.

Use Case 2 Dark matter

A woman is stabbed in a racially motivated attack in a shopping mall. The attack, caught on CCTV, lasted less than a second and did not involve any direct contact between the victim and the attacker. The CCTV footage leads to the arrest of a suspect within a few hours. The knife, found on the crime scene, the clothing (sweater, trousers) of the suspect, and tape lifts or other lifting systems lifts from the suspect's hands are sent by courier to the forensic lab. In the laboratory, the clothing is tape lifts or other lifting systems. Also, the microtraces found on the knife are transferred to tape lifts or other lifting systems. All tape lifts or other lifting systems such as (knife, suspect's clothing and hands) are analysed by the SHUTTLE microscope.

This analysis shows that the hands of the suspect contain several polyester fibres with an intense dark colour. Identical fibres are found on the handle of the knife. A European wide database search for these fibres reveals that similar fibres have been found in a glove that was analysed by a different SHUTTLE microscope in an unrelated case elsewhere in Europe. It has been assumed that the suspect wore gloves during the attack but discarded them afterwards. Instantly, policemen search the road from the shopping mall to the suspect's home. In a trash can, two gloves are found. These are tape lifts or other lifting systems and analysed by the SHUTTLE toolkit. Between the many fibres on the tape lifts or other lifting systems, the SHUTTLE toolkit locates small spots that are classified as blood. The analyst cuts out the area of the glove where the blood traces originated from. DNA analysis reveals a profile matching that of the victim.

Use Case 3 Casual encounter

In a case investigation, the suspect and the victim are neighbours and may have had a legitimate contact in the hours before the victim was killed. Due to these earlier contacts, it becomes of paramount importance to discriminate the trace distribution after the possible legitimate encounter and an attack. The forensic expert asks forensic students of a national high school to carry out reconstructions. The students reproduce the scenarios put forward by the suspect and by the prosecutor. During these tests, the students wear highly fluorescent clothing to facilitate easy analysis. After the tests, tape lifts or other lifting systems of the clothing are taken and analysed by the SHUTTLE toolkit present at the high school. The fluorescence enables quick and easy classification of the transferred microtraces. Within 30 days, the students report on the distribution of fibres traces

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following a fight and a casual encounter (as described by the suspect). The images provided by the students, created using the SHUTTLE toolkit, clearly show where transferred fibres can be expected. The forensic expert compares these images with the distribution of fibres found in the case and concludes that the trace distribution is consistent with a legitimate encounter, but not with the scenario put forward by the prosecution.

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ANNEX L

SPECIFICATIONS

In the text below, the SHUTTLE Objectives are described in detail.

Each Objective consists of several specifications, whose purpose is to encourage Tenderers to provide sufficient information describing how each specification will be achieved.

For the assessment procedure, the Scoring Model for the Award Criteria in Section 3.4 will be applied.

In the Technical Offer (in Annex E), Tenderers need to make clear how they intend to achieve the specifications, providing sufficient information.

Moreover, in the text below the word "traces" refers collectively to traces from Blood, Fibres/Hair, Glass, Saliva, Sand/soil, Skin cells, unless otherwise is clearly stated.

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1. Contract Implementation

Objective 1. Feasibility of the contract implementation plan and schedule

The purpose of the contract assessment and control process is to determine the status of the contract and contract execution plan in order to ensure that the contract performs according to the plan and schedule to satisfy technical objectives. This process evaluates the progress, achievements and business objectives (contrasting them with the requirements and plans), periodically and at major events. Information is communicated for management's action when significant variances are detected. This process also includes redirecting the contract activities and tasks, as appropriate, to correct identified deviations and variations from the Contract Management Plan. Redirection may include replanning when appropriate.

The Tenderer shall provide contract management processes and tools adequate for monitoring and evaluating the progress achieved in the execution of the contract phases. The main objectives of these processes are:

- Continuous monitoring of the contract progress.
- Early identification of problems and successes.
- Evaluation of contract's achievements.

The methodology provided by the Tenderer shall be based on a comprehensive list of well-defined milestones and the set of pre-defined procedures shall ensure that these milestones are successfully reached.

PMSPEC1.1 Contract management plan (milestones, deliverables, work breakdown structure, etc.)

A Project Management Plan (PMP) according to popular methodologies (e.g. PMI, PRINCE 2), including all the deliverables table of contents shall be included in the proposal. At least the following contents shall be well identified in PMP:

- Project scope definition
- Toolkit Specifications
- Service deployment lifecycle
- Testing approach
- Quality Management approach
- TRL Assessment
- Constraints
- Human resource requirements
- Material/equipment requirements
- Change management plan

PMSPEC1.2. Progress report shall be delivered to the Contracting Authority by E-mail.

The Tenderer shall propose a complete reporting strategy taking into consideration that:

- Current versus planned status
- Main achievements
- Main problems and mitigation actions
- Points to be taken into account by Buyers

Objective 2. Methodology of the Contract Implementation, including risk management and quality assurance

PMSPEC2.1. Risk management plan. The Tenderer shall define a risk management plan, describing how risk management will be structured and performed on the contract implementation. During the contract implementation, the Tenderer shall gather the potential risks details (technical, operational,

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managerial, etc.) which can appear during the contract execution. For each potential risk, the Tenderer shall assign the estimated probability and the expected impact as well as proposing the most adequate mitigation strategy to reduce or mitigate the risk.

PMSPEC2.2. Contract implementation methodology (work team composition, accredited experience, subcontracting, etc.)

The Tenderer:

- A. Shall provide a complete work team organization description. Such description shall include a clear view of the roles and responsibilities defined for the contract implementation, highlighting the strong points of the working team that justifies its suitability for this particular contract.
- B. Shall accredit experience in forensic sector services or relevant fields.
- C. Shall take care of all the subcontracting tasks, associated with the certification of the external Data and Service Providers or the provision of modules of the Toolkit. This shall include:
 - a. The drafting and consolidation of a Service Level Agreement (SLA) document that allows the Toolkit to meet the expected performance.
 - b. The promotion of a certification procedure for each external entity.
 - c. Tracking of the proper service provision.
 - d. The Tenderer shall specify which services can be delivered and which are foreseen to be covered by potential third parties via the Subcontracting declaration.

Documentation shall be provided in electronic format compatible with MS Office 2010 (or equivalent) as long as not otherwise agreed with the Contracting Authority.

Documentation and milestones included in CfT documentation (section xxx) are mandatory: Any documentation concerning tenderers that could be requested by European Commission over PCP implementation shall be generated.

PMSPEC2.3. Quality assurance. The Tenderer shall describe, in their proposal, the development process including the involvement and feedback from the Contracting Authority and the quality assurance of the contract outcome.

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2. Functional

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	OBJECTIVE 1: The Toolkit provides a system to recover traces efficiently using tape lifts or other lifting systems
FSPEC1.1	If the lifting system is a tape system, it shall consist of at least an adhesive tape system and a backing.
FSPEC1.2	The tape system or any other lifting system shall be cuttable using scissors and guillotines. (If the lifting system is a tape system).
FSPEC1.3	The adhesive tape system or any other lifting system shall have an adhesive strength comparable to current tape systems used of traces recovery (5-12N/25mm).
FSPEC1.4	The tape system or any other lifting system shall be possible to be handled while wearing personal protection gloves.
FSPEC1.5	The tape system or any other lifting system shall be below 1mm thick.
FSPEC1.6	Recovery of traces shall be comparable to traditional tape systems. (Fibres recovery >90%)
FSPEC1.7	The tape system or any other lifting system shall be non-selective; it shall not fractionate the traces but shall recover all types traces.
FSPEC1.8	The tape system or any other lifting system shall have a shelf life of at least three years.
FSPEC1.9	The tape system or any other lifting system shall allow to be stored at 50 $^{\circ}\text{C}$ for at least three months without altering the condition of the traces.
FSPEC1.10	The tape system or any other lifting system shall be possible to be applied at -5°C (Compliance with FSPEC1.2, FSPEC1.3, FSPEC1.4, FSPEC1.6, FSPEC1.7).
FSPEC1.11	It shall be possible to examine the tape system or any other lifting system after long term storage (10 years) in dark and dry environment.
FSPEC1.12	The backing shall be adequately stiff comparable to traditional tape systems so that the tape system is not easily damaged. Also, the backing shall be light, so that it does not hinder manual handling. (If the lifting system is a tape system).
FSPEC1.13	The tape system or any other lifting system shall be able to collect microtraces on various surfaces: flat, curved, uneven.
FSPEC1.14	The exterior surfaces of the tape system or any other lifting system shall be cleanable. The appropriate method to perform cleaning without damaging the surfaces shall be defined by the Tenderer.
	OBJECTIVE 2: The Toolkit allows further analysis of recovered traces using tape system lifts or other lifting systems

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Traces in the tape system or any other lifting system shall be FSPEC2.1 possible to be visualized in a contrast and detail that is comparable to conventional glass slides. The tape system or any other lifting system shall have a transmission of >90% for light in the visible range and a FSPEC2.2 transmission of at least 50% for light in the Ultra-Violet (UV) range (300 - 400nm). The tape system or any other lifting system shall be nonpolarizing. Compensation of tape system's or any other lifting FSPEC2.3 system's birefringence by any mean is also an acceptable solution. The tape system or any other lifting system shall be non-FSPEC2.4 fluorescing. Isolation of traces from the tape system or any other lifting system shall not lead to fracture of sensitive traces such as hairs FSPEC2.5 and fibres. Dissolution or softening of the glue layer is allowed, provided that the solvent used is gentle, preferably water or ethanol. It shall be possible to cut out small pieces or isolate in another way of the tape system or any other lifting system (including a FSPEC2.6 selected trace and preferably the backing) to perform analysis with other techniques. The tape system or any other lifting system shall not contain FSPEC2.7 pigments or fillers (that may interfere with elemental analysis). FSPEC2.8 The tape system or any other lifting system shall be DNA free. The tape system or any other lifting system shall not contain FSPEC2.9 materials that inhibit or deteriorate the PCR process. The tape system or any other lifting system shall prevent the introduction of or contamination by extraneous materials during FSPEC2.10 transport or storage. The use of a protective film is allowed. Microscopic examination of the tape system or any other lifting FSPEC2.11 system shall not deteriorate biological samples, specifically DNA analysis. **OBJECTIVE 3:** The Toolkit contains automated an microscope that provides images in various illumination modes Morphological features of traces with a size of 10 µm shall be FSPEC3.1 easily distinguished from the background in the M images acquired by the microscope. In addition to the microscopic images, images in specialised

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polarisation (P) imaging.

FSPEC3.2

illumination modes shall be acquired, including transmission

spectrometric imaging (S), reflection (R), fluorescence (F), and

In these specialised modes (FSPEC3.2), traces with a size of 10µm FSPEC3.3 or less shall be possible to be analysed. In these specialised modes (FSPEC3.2), data need not be acquired for the whole field of view: background pixels, i.e. pixels that do not contain information of any trace, may be excluded. The FSPEC3.4 number of traces, as described in FSPEC3.1, that are not analysed shall be lower than 2 %. In these specialised modes (FSPEC3.2), the coordinate system used shall be directly related to the coordinate system used for M FSPEC3.5 images, so that the specialised analyses can be traced accurately to a position in the M images. In these specialised modes (FSPEC3.2), the analysis positions FSPEC3.6 shall be identical for all specialised modes. The output shall consist of a single image or data set per FSPEC3.7 illumination mode. Mapping and stitching of images is allowed. FSPEC3.8 For S images, the spectral range shall be 320-720 nm or broader. FSPEC3.9 For S images, the spectral resolution shall be 10 nm or better. For S images, noise level in these images shall be below 4% FSPEC3.10 (transmission scale). Acquisition of S images shall have a high dynamic range (12 bit FSPEC3.11 or higher). The sample shall be possible to be illuminated by UV light at 365 nm (±3nm) to acquire F images. (Full spectrometric analysis is FSPEC3.12 allowed). R and F images shall have at least Red-Green-Blue (RGB) FSPEC3.13 detection or equivalent. (Full spectrometric analysis is allowed). For R images, the image shall not be disturbed by direct reflection FSPEC3.14 of the tape system or any other lifting system e.g. darkfield illumination. Birefringence shall be calculated from the P images. The retardation shall be possible to be measured up to 6000 nm with FSPEC3.15 an accuracy of 20 nm or better. The method used to calculate the birefringence shall be described. All data acquired shall be rotation insensitive. This includes the FSPEC3.16 calculated birefringence values. The instrument shall be driven by a computer and software and FSPEC3.17 does not require user intervention after the acquisition is started. The software shall be able to store and retrieve default acquisition parameters (e.g. illumination modes, spectral range, wavelength FSPEC3.18 for fluorescence, magnification). The parameters shall be possible to be tuned to suit advanced or non-routine analysis.

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The software shall include a data viewer, in which data acquired (raw (coordinates, spectra), calculated (birefringence, retardation **FSPEC3.19** value), specialised analysis (R, F, P)) can be viewed and checked visually. The software includes a data viewer, in which images can be FSPEC3.20 zoomed in and out completely (i.e. The user is able to distinct between individual pixels). The software shall include a data viewer, in which colour images of S or M data can be displayed. The colour values shall be based FSPEC3.21 on the S spectra or on additional colour acquisition of M images, or both. The software shall include a data viewer, in which S spectra from FSPEC3.22 single pixels or a selection of pixels can be displayed, extracted and saved, e.g. in a .csv format. The acquisition parameters acquired data and calculated data shall be stored together, e.g. in a single file, or related in a single FSPEC3.23 database. Data shall be stored as raw data (filtering of background pixels is allowed). The software shall store acquired datasets in such a way that it can be read by normal programming languages (e.g. MatLab, Java, Python). If data is stored in ordinary computer files, a standard format, such as NETCDF is preferred. If a proprietary FSPEC3.24 data structure is used, libraries or instructions to extract data from these files shall be supplied. Direct insertion of acquired data into a database is also acceptable. This can be a general-purpose database such as MySQL or PostgreSQL, or a more specialised database such as SciDB. In-focus images described in FSPEC3.2 of the majority of the FSPEC3.25 traces (>95% for normal cases) on the tape system or any other lifting system shall be possible to obtain. **OBJECTIVE 4: The Toolkit converts acquired images to** information (IP) Algorithm or combination of algorithms The algorithm or combination of algorithms shall accept data (or FSPEC4.1 info on the location of data) from the GUI. See also FSPEC5.3 and FSPEC5.4).

FSPEC4.2 The algorithm or combination of algorithms shall validate whether the input data is compatible with the algorithm.

The algorithm or combination of algorithms shall localise, analyse and classify traces in images.

FSPEC4.4 The algorithm or combination of algorithms shall return results to the GUI.

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FSPEC4.3

FSPEC4.5

The algorithm or combination of algorithms shall determine the outline of a trace (decides which pixels in an image belong to a specific trace).

FSPEC4.6

The algorithm or combination of algorithms shall determine a number of geometric parameters for every trace, such as the length, width and surface area. For fibre and hair traces, this may imply skeletonizing and/or tracing along the length, so that the real length is calculated. Geometric calculations shall be valid on small scale (μ m), but also for larger traces (up to several centimetres).

FSPEC4.7

The algorithm or combination of algorithms shall determine the optical properties (see objective 3 for a list of imaging modes to be implemented) for every trace from the inserted images and the advanced analyses in S, P, F and R modes. For smaller traces, a single set of parameters shall be made available (depending on the effective pixel size of the solution and the size of the trace). For larger traces, a larger number of analysis shall be available. In such a set, data may be combined (e.g. averaged) such that the effective measurement spot becomes 50µm. This implies that an array of optical properties shall be returned for larger traces. Each of the members in such an array shall be related unambiguously to the trace.

FSPEC4.8

Every item in this array shall contain averaged data of the direct surroundings of the central position. The averaged data shall include the coordinates, the transmission spectrum, the reflectance, and the retardance. Also, the number of averaged pixels and the variation between them (e.g. as a standard deviation) shall be included.

FSPEC4.9

Measurement errors for geometrical analysis shall not exceed 5%.

FSPEC4.10

The image processing procedures shall take overlap, crossings, or adjacency into account. Overlapping areas shall be excluded for optical measurements.

FSPEC4.12

Accuracy to distinguish overlapping, joining or adjacent traces shall be >90% for cases where such situations are obvious for a human examiner.

FSPEC4.13

In addition to morphologic and optical properties specified above, the algorithm or combination of algorithms shall classify every trace into classes that overlap with the traces. Additional categories are allowed.

FSPEC4.14

The classifier shall include an 'unknown' category (trace not known) and an 'overload' category (image too crowded for useful analysis)

OBJECTIVE 5: The Toolkit shall include a Graphical User Interface

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FSPEC5.1 The GUI shall provide the options to store data in local folders as well as to the database (only for certified users).

FSPEC5.2 The GUI shall allow the user to select datasets (acquired by the automated microscope) and to initiate processing of these datasets by the algorithm or combination of algorithms.

FSPEC5.3 The GUI shall allow the user to select parts of datasets (selected imaging modes, cropped images, selected spectral ranges).

The GUI shall handle the data acquired with standard settings of the automated microscope (see FSPEC 3.19). In addition, data acquired with non-standard acquisition protocol of the automated microscope can be handled.

The GUI shall be able to connect to the supplied algorithm or combination of algorithms, but also to alternative algorithms or combination of algorithms from external sources developed outside the SHUTTLE project.

The communication between the GUI and the algorithm or combination of algorithms shall be open. Clear instructions on how to include alternative algorithms or combination of algorithms shall be provided.

The GUI shall allow the user to select the database where results will be stored. This database, specified further in **OBJECTIVE 6**, shall be installed on the same computer or on a different computer (the choice for installation will be made by the end users). Data stored in the database shall be read by the GUI and used in the same way as data retrieved from the algorithm or combination of algorithms.

In the GUI, a user shall be able to select one or more algorithms or combination of algorithms. Data shall be then processed by each of the selected algorithms or combination of algorithms.

The results of the algorithm(s) or combination of algorithms shall be presented to the user as a table. This table shall include all traces localized by the algorithm or combination of algorithms, including their coordinates and classification.

The GUI shall provide the option to present the results of the algorithm(s) or combination of algorithms as an overlay on the original images.

The results of the algorithm(s) or combination of algorithms shall be inserted into the database (see below) via the GUI. The GUI shall be able to cope with a secure access management of the database. This implies at least a password protected access and encrypted communication with the database.

The calculations shall be scalable and independent of the coordinate system of the images.

FSPEC5.4

FSPEC5.5

FSPEC5.6

FSPEC5.7

FSPEC5.8

FSPEC5.9

FSPEC5.10

FSPEC5.11

FSPEC5.12

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FSPEC5.13	Users shall be able to load images acquired with other techniques, e.g. images acquired by a camera on a conventional microscope (jpeg, tiff).
FSPEC5.14	The user shall have the option to view the loaded image.
FSPEC5.15	The GUI shall provide an overview window of the total number of the acquired images (of the tape system or any other lifting system), so as the user can select any of the individual images to be viewed.
FSPEC5.16	The GUI shall provide the option to view the spectrograph of the chosen pixel area in a separate window eg. pop-up window.
FSPEC5.17	GUI shall have the ability to control all the different software tools that are needed for the SHUTTLE Toolkit operation.
FSPEC5.18	There shall be a functionality that allows raw data to be imported from external sources.
FSPEC5.19	The user shall have the option to fully configure the parameters on which the calculation is based through the GUI.
	OBJECTIVE 6: The Toolkit stores and queries data and helps in its interpretation
	Database storage
FSPEC6.1	The DB shall store raw data sets acquired by the automated microscope.
FSPEC6.1 FSPEC6.2	·
	microscope.
FSPEC6.2	microscope. The DB shall contain the results of the image processing tools. The database shall be extendable and new techniques /
FSPEC6.2 FSPEC6.3	microscope. The DB shall contain the results of the image processing tools. The database shall be extendable and new techniques / features can be added. The database shall make use of the latest version of open source
FSPEC6.2 FSPEC6.3 FSPEC6.4	microscope. The DB shall contain the results of the image processing tools. The database shall be extendable and new techniques / features can be added. The database shall make use of the latest version of open source databases (e.g. MySQL, PostgreSQL, MariaDB) The database shall provide the option to manage users (add, delete, edit) and their access rights by administrators not related
FSPEC6.2 FSPEC6.3 FSPEC6.4 FSPEC6.5	microscope. The DB shall contain the results of the image processing tools. The database shall be extendable and new techniques / features can be added. The database shall make use of the latest version of open source databases (e.g. MySQL, PostgreSQL, MariaDB) The database shall provide the option to manage users (add, delete, edit) and their access rights by administrators not related to the SHUTTLE supplier. The database shall be extendable. Data acquired by other techniques, such as a microscopic description, FTIR, and MSP can
FSPEC6.2 FSPEC6.3 FSPEC6.4 FSPEC6.5	microscope. The DB shall contain the results of the image processing tools. The database shall be extendable and new techniques / features can be added. The database shall make use of the latest version of open source databases (e.g. MySQL, PostgreSQL, MariaDB) The database shall provide the option to manage users (add, delete, edit) and their access rights by administrators not related to the SHUTTLE supplier. The database shall be extendable. Data acquired by other techniques, such as a microscopic description, FTIR, and MSP can be imported. All analysis results stored in the database shall be traced

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FSPEC6.10	The database shall be able to be hosted by a commercial supplier (not related to the SHUTTLE supplier) after the contract implementation.
FSPEC6.11	The database shall be secure up to modern standards.
FSPEC6.12	The database shall have various levels of access rights for viewing data, entering data, and validating data.
FSPEC6.13	The database shall automatically create log files containing all the actions performed by users (providing timestamp, ID and changes made to DB).
FSPEC6.14	General information on the background of data, such as the nature of the donor item, shall be entered in a standardized way.
	Data extraction
FSPEC6.15	Data used for the data representations shall be possible to be extracted from the database, preferably using a graphical query builder. Example queries are: 'select all traces that have been classified as glass', 'select microscopic images M of all traces that were classified as 'unknown' in all datasets acquired in the last week', 'select all fibres from a specified dataset that contain colour spectra that are comparable to a specified known sample'.
FSPEC6.16	Queried data may consist of data from a single dataset or data from a larger number of datasets.
FSPEC6.17	Queried data shall at least consist of the images from microscopic images M, analysis data from S, P R, or F images, or results from image processing routines.
FSPEC6.18	Queried data shall be saved as a text file, csv file or binary file with a known and documented structure.
	Data representation
FSPEC6.19	Data extracted from the database shall be processed to yield a list or table of all traces found in a specific item or analysis. This list can be used to devise the further examination strategy. Also the list can be used to check or validate the results shown in the overview, e.g. by conventional microscopy.
FSPEC6.20	Data extracted from the database shall be processed to yield a measure of similarity between two (sets of) traces. This shall be a user selectable function in the GUI.
FSPEC6.21	Data extracted from the database shall be processed to yield an indication of the rarity of a target trace in the (selected records of) the database. This shall be a user selectable function in the GUI.
FSPEC6.22	Data extracted from the database shall be processed to yield a calculation of the evidential value of a result. This shall be a user selectable function in the GUI.

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FSPEC6.23	Data extracted from the database shall be processed to yield an indication of the number of traces that are similar or identical to a specific trace or fall within the variation of a set of traces. This shall be a user selectable function in the GUI.
FSPEC6.24	Data extracted from the database shall be processed to yield an image of the tape system or the lifting system where traces that are similar or identical to a specified trace are highlighted, so that the original distribution of these traces can be assessed (also see FSPEC5.10). This shall be a user selectable function in the GUI.
FSPEC6.25	Data extracted from the database shall be processed to yield a measure of the heterogeneity of the extracted data. This shall be a user selectable function in the GUI.
	Exchange and collaboration
FSPEC6.26	The database shall be possible to be installed and accessed in different locations. These may act as independent databases. Synchronising is currently not required.
FSPEC6.27	Transfer of data between different installations of a potential server shall be possible.
FSPEC6.28	The database shall not contain case information, such as names of suspects, case file numbers, etc. It is based on items identified by a unique internal key structure.
FSPEC6.29	Database shall be based on open source software or shall be at least accessible by standard software, such as MATLAB, Python and R.
FSPEC6.30	Data shall be marked as 'validated' by certified users before stored to the database.
FSPEC6.31	It shall be possible for users to comment on items or datasets, e.g. to indicate flaws.
	OBJECTIVE 7: Toolkit practical issues to be met
	The area of the tane system or any other lifting system to be used
FSPEC7.1	The area of the tape system or any other lifting system to be used for recovery can be varied. Tape systems or any other lifting systems of varying size can be analysed by other parts of the Toolkit. A ROI shall be selected before acquisition with the automated microscope. Cropping of data after acquisition shall be possible (so that only a part of the data is processed by the image processing routines). The maximum size to be considered shall be A4.
FSPEC7.1	for recovery can be varied. Tape systems or any other lifting systems of varying size can be analysed by other parts of the Toolkit. A ROI shall be selected before acquisition with the automated microscope. Cropping of data after acquisition shall be possible (so that only a part of the data is processed by the image processing routines). The maximum size to be considered shall be

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FSPEC7.4

FSPEC7.5

FSPEC7.6

FSPEC7.7

FSPEC7.8

FSPEC7.9

FSPEC7.10

FSPEC7.11

user intervention.
The system shall be safe to use. The system shall be compliant with clauses 6) Protection against el. Shock; 7) Protection against mechanical HAZARDS; 9) Protection against the spread of fire and 10) Equipment temperature limits and resistance to heat of EN 61010-1:2010 +A1:2019 "Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements"
Individual components (commercial products) of the Toolkit shall be compliant with applicable EU safety standards.
Moving parts, high intensity illumination, and other parts that may injure analysts shall be shielded where possible and shall be possible to be shut down instantaneously using a single emergency button.
The tools can be used and correctly operated in the intended environment (Ambient temperature: 15°C - 35°C ; Relative humidity: 20% - $70\%(30^{\circ}\text{C})$).
The microscope apparatus shall fit in area not exceeding 2 m^2 .
None of the microscope apparatus' dimensions shall exceed 2 m.
The microscope apparatus shall not weigh more than 100 Kg.
None of the Toolkits components shall emit noise exceeding

least four A4 tape systems or any other lifting systems without

FSPEC7.12 The Toolkit shall be accompanied by a Full HD monitor screen at least 20".

85db(a) SPL.

The Toolkit shall be able to operate with normal mains power (220 - 240 Vac, 50 - 60 Hz).

The Toolkit shall have the appropriate means of connection to the mains (cable & plug).

FSPEC7.15 The hardware of the computer which will be provided shall be designed properly so as all the needed calculations and operations be performed seamlessly in time.

FSPEC7.16 Software with hardware compatibility shall be guaranteed.

The tenderers shall provide all the necessary equipment and components for the correct operation of the SHUTTLE Toolkit.

FSPEC7.18 The SHUTTLE Toolkit shall be comprised of all relevant parts that are necessary for its correct operation.

FSPEC7.20 All the documentation and GUI will be at least in English.

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OBJECTIVE 8: Minimisation of classification

FSPEC8.1

The algorithm or combination of algorithms shall provide, among the results, a measure for the certainty or uncertainty of a trace classification.

FSPEC8.2

The Tenderer shall built the Toolkit in such way that it will minimise the classification errors.

Specific acceptable classification errors will be provided in due time.

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3. Non-Functional

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OBJECTIVE 1: Quality and traceability

NFSPEC1.1

The automated microscope shall be automatically calibrated, so that the data acquired by the microscope (intensities, coordinates etc.) are corrected for temporal variations or ageing of the equipment.

NFSPEC1.2

The automated microscope shall be robust and work on specification for at least 4 days without the need for manual adjustments. If periodic manual adjustments (after the 4 days period) are needed for optimisation, a clear description shall be provided.

NFSPEC1.3

Action performed by the Toolkit shall be registered automatically. This implies that datasets generated by the Toolkit, results of the data processing routines, and data representations contain information on the user performing the action, the time of action, the used instrument/database, and the used method/algorithm or combination of algorithms shall be stored. All data shall be possible to be traced back to the item(s) and tape system system(s) or lifting system(s) from which data where acquired. Recovery with tape system or lifting system(s) is traceable as well, but this registration need not be automatic.

NFSPEC1.4

Tape systems or other lifting systems shall obtain a unique label. Labelling may be carried out after recovery of traces. The used labels, e.g. a QR code or barcode, shall recognized by the automated microscope, and the identity of the tape system or the lifting system is stored with the analysis.

Users shall be able to check actions performed by the Toolkit. For every

NFSPEC1.5

trace classification mentioned in data extracted from the database, the user shall be able to a) check which algorithm or combination of algorithms was used for classification; b) display the images of this trace acquired by the microscope. The trace to be checked in these images is highlighted or marked; c) go back to the tape system or the lifting system to observe the trace microscopically or isolated it for additional investigation. This implies that the coordinates used by the microscope and the mentioned in the database shall be used to find the correct location of the trace on the tape systems or any other lifting systems

NFSPEC1.6

The supplied software tools have clear access rights for different tasks. The Toolkit shall include an advanced security technology, providing different levels of access to end-users and admin.

NFSPEC1.7

The Toolkit shall integrate flexible, reliable and extendable systems.

NFSPEC1.8

The Services shall be able to continue operating despite receiving and processing invalid or wrong data. Thus, all services shall inform the End-User in case of any relevant occasions.

NFSPEC1.9

High availability of the Toolkit shall be ensured, being robust enough to external factors (e.g. server crash).

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NFSPEC1.10

During the elaboration of the technical offer, the candidate Tenderer shall provide a document (Quality Control Plan) on how the quality control of data will be internally handled during the operation of the services (Phase 3 and onwards). The tenderer shall abide to quality control measures. Further to this and in order to ensure high quality standards, the Tenderer shall include additional data quality measures or even commits to reach higher data quality thresholds. The tenderer shall use as minimum related ISO standards for data quality and most the commonly used data quality elements.

NFSPEC1.11

The Toolkit shall provide high computing availability, having a continuous, uninterrupted, fault tolerant Solution.

OBJECTIVE 2: Modularity and integration

NFSPEC2.1

The tools in the SHUTTLE Toolkit shall be integrated in a clear and user-friendly manner. It shall be possible to use individual tools of the Toolkit with other (non-SHUTTLE) tools.

NFSPEC2.2

Software for different tools (image acquisition, image processing, database access) shall be combined into a single package or at least designed such that ease of use is guaranteed (Similar look and feel).

NFSPEC2.3

The Toolkit shall process traces that are recovered using other media than the SHUTTLE tape or any other lifting system. This could be the tape systems that are currently in use in the forensic labs, e.g. in cold cases or samples on glass slides and tape system or any other lifting system up to 3mm thick.

NFSPEC2.4

The user shall be able to interact with the automated microscope, the image processing software, and the database software from a single computer.

NFSPEC2.5

The database and the image processing routines shall also be possible to be accessed from other computers.

NFSPEC2.6

All interfaces shall follow modular and preferably based on open systems, ensuring the expandability of the system

NFSPEC2.7

The system shall be as dynamic as possible serving future needs (posing any issues in any system modification/extension) such as expandability and maintainability.

NFSPEC2.8

The solution shall be fully scalable so that it can easily be adapted to new integration needs or changes in performance, reliability and data volume requirements.

NFSPEC2.9

Both modularity of each component and communication between modules shall be ensured.

OBJECTIVE 3: Training

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NFSPEC3.1

The Toolkit shall be accompanied by a user manual that covers all the relevant operational aspects.

NFSPEC3.2

The Tenderer shall train End-Users about the exploitation of the solution by the generation of the training material without additional costs for the Contracting Authority.

The Tenderer shall train End-Users about the exploitation of the

solution by the execution of the training sessions without additional costs for the Contracting Authority. Training courses shall take place in PCP phase 3 of the contract. A course of a minimum length of 48h for at least 6 persons with User role will have to be provided. It will be a 'plus' of the proposal if the Tenderer provides more courses. The Tenderer shall pay for all costs derived from the journey of End-Users (if needed) to attend the courses and/or the web platform that will

NFSPEC3.3

Training courses shall take place in PCP phase 3 of the contract.

NFSPEC3.5

NFSPEC3.4

Training documentation, workshops and user manuals will be all at least in English language.

OBJECTIVE 4: Maintenance

host the training sessions.

NFSPEC4.1

The Tenderer shall inform all End-Users about downtimes of the services at least a week in advance.

The maintainability described as a measure of how quickly and effectively a service, component can be restored to normal working conditions after a failure shall be:

NFSPEC4.2

 $Maintainability(MTRS\ in\ hours) = \frac{Total\ downtime\ in\ hours}{of\ service\ breaks} \leq 2\ hours\ Number$

OBJECTIVE 5: Solution Technology Readiness

NFSPEC5.1

PCP contracts cover a specific part of the innovation cycle; therefore, the Solution's TRL at the beginning of the contract shall be preferably 4 or 6. The tenderer shall demonstrate the evolution of this TRL level throughout the contract lifecycle, aiming at the end of PCP phase 3 to reach TRL 8.

NFSPEC5.2

The Tenderer shall commit to provide, if it is required by the SHUTTLE Consortium, the supporting information that properly justifies the Technology Readiness Level (TRL) that initially claimed for the

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Solution. Definitions of the TRLs, description and required supporting information are included in the "DoD TRA Deskbook (2009)".

	OBJECTIVE 6: User Experience
NFSPEC6.1	The Toolkit shall be designed in such a way that users experience the Toolkit as a unity.
NFSPEC6.2	The user shall experience the Toolkit as an easy-to-use unity.
NFSPEC6.3	The user shall be able to replace part of the Toolkit with other tools. The consortium encourages solutions in which the tools can be used individually and is compatible with insertion of data/samples from other sources or exports to other tools. This affects all tools in the Toolkit, be it in different ways.
NFSPEC6.4	Regarding the software tools, all the interaction with users will be done through the dedicated GUIs.
NFSPEC6.5	The Toolkit shall be usable. Usability is concerned with enabling users to effectively and efficiently achieve their end objective with the product.
NFSPEC6.6	Practitioner evaluation and acceptance. The tenderers shall provide their individual view for the applications to be performed, which will support the use case scenarios in the pilot. This will allow practitioners to evaluate the benefit of the proposed solutions.

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4. Commercial Feasibility

Objective 1 Exploitation Plan - Short to Mid-Term exploitation plan, including a commercialisation strategy. Completeness, sense of reality and feasibility of the commercialisation plan including the market analysis and risk management

Objective 2. Commercial Viability. Sense of reality and feasibility of the principles for licensing, pricing, packaging, distribution.

The Tenderer shall develop at each PCP phase a short to mid-term exploitation plan, including a commercialisation strategy considering other acquisition modalities different to direct purchase (e.g. provision services, leasing of equipment, renting of equipment, co-ownership, etc.) and the roadmap designed to take each Service to market.

A detailed risk management plan shall also be presented. In order to elaborate on the market, the Tenderer shall provide a detailed market analysis based on the insights provided in the Tender documentation (section 2.10.3. Commercial exploitation of results).

Moreover, this study shall describe indicatively and in detail:

- the Services,
- the conditions for contracting or acquiring this product,
- costs breakdown,
- potential market
- etc.,

indicating whether the full solution or parts of it can be used. If only parts of the solution can be used, the selected parts have to be obviously able to function as a separate set.

The study shall also show the potential re-usability and extensibility of the Toolkit or parts of it regarding End-User type and domain (other than forensics sector).

5. Evaluation of the solution and sustainability of testing

The Tenderer should define in detail the plan for the Operational Evaluation of the final Solution in alignment with what is described for the testing in Phase 3 in the CfT documentation.

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