



## D9.6 Second Public SHUTTLE Workshop

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### Executive Summary

During the SHUTTLE project, three public events are planned to disseminate results to targeted audiences. The first public workshop, held at the Mediterranean Security Event on 30<sup>th</sup> October 2019, is described in D9.2. This deliverable D9.6 describes the second public workshop “Improving Forensic Trace Recovery”, held online on 1<sup>st</sup>, 2<sup>nd</sup> and 5<sup>th</sup> February 2021. A final public workshop is planned at project end in April 2022 and will be reported in D9.7.

The second public workshop was co-organised between the SHUTTLE project and the Lorentz Center and the workshop objectives and program were developed by a scientific workshop organisation committee consisting of representatives of SHUTTLE partners as well as experts external to the consortium.

The workshop achieved the objectives of increasing awareness of the SHUTTLE machine+toolkit among forensic laboratories, building the SHUTTLE network and community of interested stakeholders, and addressing the common challenge identified in SHUTTLE for the need to introduce a toolkit 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 homogenized.

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## List of Acronyms / Abbreviations Used in this Document

Acronym / Abbreviation	Definition
ENFSI	European Network of Forensic Science Institutes
PCP	Pre-Commercial Procurement
Q&A	Questions & Answers

# 1 Introduction

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The development of the SHUTTLE toolkit is realised through a pre-commercial procurement (PCP) action, which is coordinated and jointly carried out between forensic institutes across Europe.

More precisely, the forensic institutes organise and manage procurement of R&D services involving risk benefit sharing under market conditions, and competitive development in phases.

During the SHUTTLE project, three public events are planned to foster dissemination of results to target audiences.

The first public workshop objectives were to keep interested persons updated on SHUTTLE progress and future steps and to have an effective dialogue with the industry (Call for Tender, PCP process) and the End-users (future applications, path to standardisation).

This second public workshop enabled a general presentation of the project and a first presentation of the contractors' prototypes currently under development in PCP Phase 2 to a highly relevant audience of potential end-users and researchers concentrated in Europe.

A Final Conference is planned at M48 to communicate the results of the project.

This report provides a summary of the workshop preparations including its aims, the workshop content specific to SHUTTLE, and outcomes. The workshop program and survey of participants are provided in Annexes.

## 2 Workshop Preparation

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### 2.1 Workshop rationale

In the application to the Lorentz Center and the invitations to participants, the workshop rationale was described as follows:

*Current forensic methods have an incredible sensitivity. Minute traces, often invisible to the bare eye, allow for a full analysis. Only a few cells yield a full DNA profile; a single fibre suffices to identify the fibre type as well as the dyes used for its coloration; the elemental composition of glass shards smaller than 100 µm is now analysed on a routine basis in forensic laboratories.*

*However, before a forensic expert can examine a trace, it needs to be recovered. Unfortunately, the procedures for recovery of traces are heterogeneous: experts in different forensic disciplines and in different laboratories use different methods. Sometimes, such methods are not compatible, and recovery of one type of trace may destroy other traces. Heterogeneity also hinders scientific studies into the behaviour of traces, accreditation of new technology, and international cooperation.*

*In this workshop, forensic investigators and experts in related fields will explore the current environment and work towards a draft for cross-discipline best practices. They will take current scientific insights and technological developments into account. In addition, obstacles that may hinder implementation of best practices will be identified as well as measures to mitigate them. Finally, participants will explore the possibilities opened by the workshop, such as improved collaboration and joint research projects.*

### 2.2 Workshop objectives for SHUTTLE

The second public workshop was organised in February 2021 on the topic of “Improving Forensic Trace Recovery”. The aim of the workshop was to lay the groundwork for a scientifically sound, generic, homogeneous, and efficient methodology of forensic trace recovery. This aim directly addresses the Common Challenge identified in SHUTTLE: the need to introduce the SHUTTLE machine and toolkit 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 homogenized.

An additional aim of the workshop session dedicated to new technologies was to create awareness among forensic laboratories of the SHUTTLE machine + toolkit prototypes under development by the SHUTTLE contractors and to build the SHUTTLE network and community of interested stakeholders and potential users. These aims are in accordance with the project dissemination plan, ultimately to promote uptake of the SHUTTLE results and their future sustainability.

### 2.3 The co-organisation of the workshop

#### 2.3.1 Workshop Organisation Committee

The intention for the SHUTTLE public workshops has been, whenever possible, to co-organise events with related highly visible organisations to benefit from the additional communication opportunities this offers. For the second public workshop, an alignment of objectives allowed collaboration with a Workshop Organisation Committee composed of two representations of SHUTTLE partners and three other experts in the field:

**Scientific organizers:**

Jaap van der Weerd, Netherlands Forensic Institute (SHUTTLE participant)

Iris Bijker, Amsterdam University of Applied Sciences (SHUTTLE participant)

Rebecca Bucht, National Bureau of Investigation, Finnish Police

Jan Grunwald, Bayerisches Landeskriminalamt  
Bas Kokshoorn, Netherlands Forensic Institute

This group, led by Jaap van der Weerd, formulated a concept for the workshop, based on perceived need within the field of forensic science and confirmed by the interest of other international experts in the field, and submitted an application to the Lorentz Center for financial and material support.

SHUTTLE partner ARTTIC acted as liaison for practical and organisational issues between the Workshop Organisation Committee, the Lorentz Center, and the SHUTTLE project management.

### 2.3.2 Lorentz Center

The [Lorentz Center](#), in Leiden, The Netherlands, is a well-known conference center for hosting international scientific workshops. The Lorentz Center is affiliated with Leiden University and is nationally funded. Typically, Lorentz workshops are week-long in-person events, dedicated to interaction, inclusiveness, and scientific excellence.

Given the worldwide coronavirus pandemic situation, the Workshop Organisation Committee and the Lorentz Center agreed to organise a scaled-down online event. The Lorentz Center provided constructive criticism of the workshop concept and program as well as support in the form of the MS Teams platform and Wonder application used for the workshop, technical support, and administrative support with invitations, registration, poster, and mailing of welcome kits.

**Improving Forensic Trace Recovery**  
- Online -

1 - 5 February 2021  
**Venue:** Lorentz Center@Oort

If you are invited or already registered for this workshop, you have received login details by email.

Current forensic methods have an incredible sensitivity. Minute traces, often invisible to the bare eye, allow for a full analysis. Only a few cells yield a full DNA profile; a single fibre suffices to identify the fibre type as well as the dyes used for its coloration; the elemental composition of glass shards smaller than 100µm is now analysed on a routine basis in forensic laboratories.  
[Read more...](#)

**Program** ▼  
**Participants** ▼  
**Workshop files** ▼

**Scientific organizers:**  
Jaap van der Weerd, Netherlands Forensic Institute ✉  
Rebecca Bucht, National Bureau of Investigation, Finnish police ✉  
Jan Grunwald, Bayerisches Landeskriminalamt ✉  
Iris Bijker, Amsterdam university of applied sciences ✉  
Bas Kokshoorn, Netherlands Forensic Institute ✉

**Sponsors:**  
SHUTTLE

**Log-in**

**Lorentz center** **Improving Forensic Trace Recovery**  
1 - 5 February 2021, Leiden, The Netherlands  
Online Workshop

**Scientific Organizers**  
Jaap van der Weerd, Netherlands Forensic Institute  
Rebecca Bucht, National Bureau of Investigation, Finnish police  
Jan Grunwald, Bayerisches Landeskriminalamt  
Iris Bijker, Amsterdam university of applied sciences  
Bas Kokshoorn, Netherlands Forensic Institute

**Topics**  
• Overview of Current Recovery Procedures  
• Investigation of Recent Forensic Recovery Procedures  
• Role of the Forensic Scientist: Perspective  
• Recovery of Latent Fingerprints  
• Recovery of Latent DNA  
• Recovery of Latent Bloodstains  
• Recovery of Latent Hair  
• Recovery of Latent Skin Cells  
• Recovery of Latent Saliva  
• Recovery of Latent Urine  
• Recovery of Latent Semen  
• Recovery of Latent Vaginal Secretions  
• Recovery of Latent Feces  
• Recovery of Latent Hair  
• Recovery of Latent Skin Cells  
• Recovery of Latent Saliva  
• Recovery of Latent Urine  
• Recovery of Latent Semen  
• Recovery of Latent Vaginal Secretions  
• Recovery of Latent Feces

**Workshop coordinator**  
 Claire Bleize  
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Figure 1: Workshop page on Lorentz Center website



## Welcome Kit

To foster a sense of community among participants, a “Welcome Kit” was posted to participants who provided their mailing addresses. The welcome kit contained the workshop poster, a message from the organisers and goodies from the Lorentz Center.

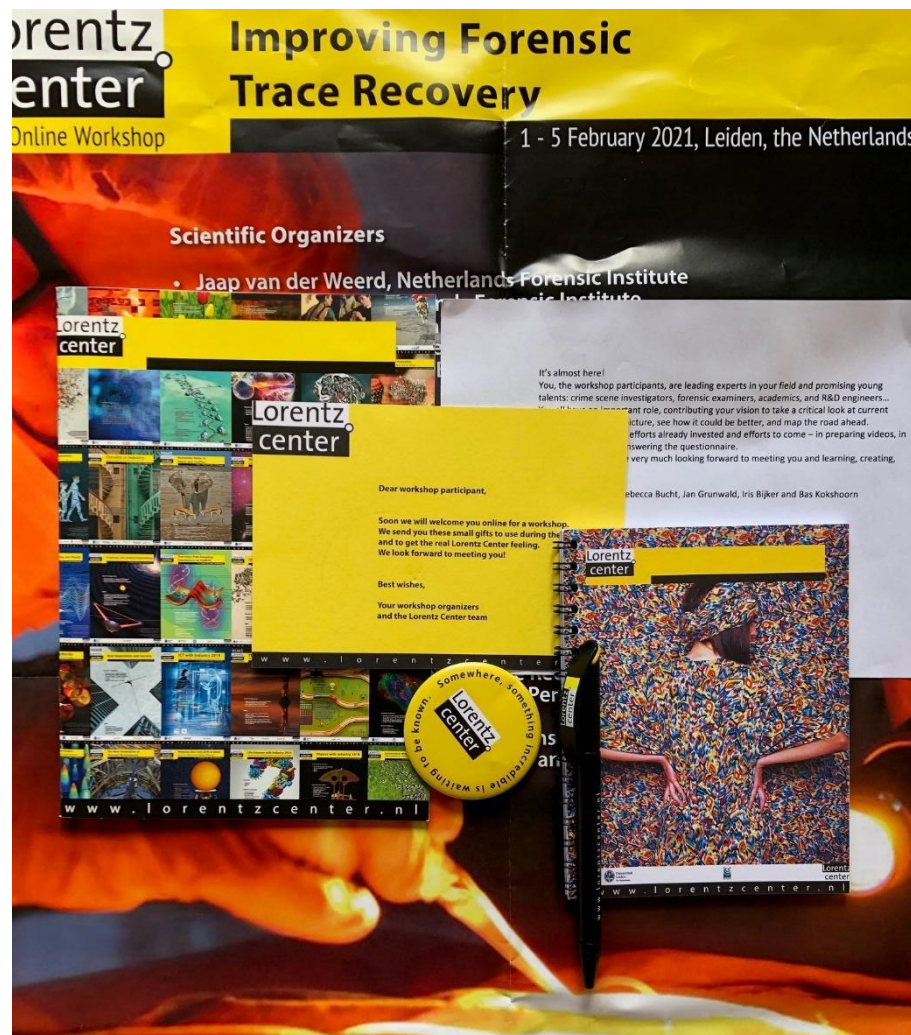


Figure 2: Welcome Kit

## Workshop poster

A workshop poster was created by the Lorentz Center with input from ARTTIC and the Workshop Organisation Committee. The poster was used for communication and publicity purposes.



Figure 3: Workshop poster

### 2.3.3 Budget expenditure

Under the originally intended in-person format, the Lorentz Center and the SHUTTLE project had agreed to share the costs of the workshop including facilities, support, catering, and some travel and accommodation costs.

With the fully virtual format eventually chosen due to the pandemic situation, costs were significantly reduced. The Lorentz Center covered costs for the online meeting applications used and the communication materials prepared and posted to participants. The only costs to the SHUTTLE project are partner personnel costs for time and effort spent for workshop preparation and participation.

## 2.4 Workshop program

As mentioned above, the workshop program was scaled down from a week-long in-person event to a three half-day online event due to the pandemic. It was anticipated that five full days online would be unrealistic and unproductive for the participants. The Workshop Organisation Committee agreed on a format of three afternoons, Monday, Tuesday and Friday, focused on discussion groups and the live presentation of new technologies, including SHUTTLE, with the support of a series of a dozen

pre-recorded lectures to be viewed by participants beforehand, to inform the discussions. A pause was created between Tuesday and Friday sessions, to allow reflection and maturation of ideas before final discussion groups.

The final program is included as [Annex A - Program](#).

## 2.5 Survey questions

As an input to the workshop small group discussions, participants were asked to complete survey questions on the following topics before the workshop start:

- General Information on participants
- Exploring Trace Recovery Procedures
- Exploring Quality Systems
- Exploring Judicial Systems

A summary of survey results is provided in [Annex B – Survey Results](#). Approximately half of the participants completed the surveys.

## 2.6 Promotion of the workshop

Since the workshop was originally conceived of as an in-person event where space is limited to 55 participants, and to facilitate small discussion groups among knowledgeable experts, the workshop was largely an invitation-only event. The Workshop Organisation Committee issued invitations through their professional networks, seeking a balanced representation between investigators from different disciplines and countries, as well as experts in fields that are relevant to provide the background for the optimal procedure. Commercial parties, including the SHUTTLE contractors, were foreseen to be included for the session on new technologies only.

Following the decision to hold the workshop as an online event, the number of expected participants was increased and direct outreach to the SHUTTLE network and community and communication on the workshop was done through the SHUTTLE newsletter, sent in November 2020 which reaches approximately 250 interested stakeholders, social media accounts, and the public website. Commercial parties were invited to participate to all sessions.



Figure 4: Announcement of workshop through SHUTTLE LinkedIn and Twitter accounts

During and after the workshop, additional announcements were made through the SHUTTLE social media accounts, as well as those of the Lorentz Center, some SHUTTLE partners, and some participants, to promote the workshop.



Figure 5: Example of posts to promote workshop through social media

## 2.7 Participants

Out of 81 persons invited to the workshop, 67 persons registered and attended. In the table below, a list of the participants' organisations is shown. Several SHUTTLE participants from the partner forensic laboratories attended. Participants from police and forensic services of several European Member States attended, as well as participants from USA, Canada and Australia and additional European countries. For further detail on the participants, see Annex B - General Information.

Table 1: Participants from the following organisations attended the workshop

Organisation
Amsterdam University of Applied Sciences
ARTTIC
AUAS, VU University, Police Academy
aura optik
Bayerisches Landeskriminalamt
Clyde HyperSpectral Imaging
Comisaría General de Policía Científica
Delft Technical University, Dept. Biomechanical Engineering
Dutch Police
Eastern Finland Police Department/Kuopio Unit
European Commission
Federal Bureau of Investigation



Finnish Police, Crime scene unit
Finnish Police, National Bureau of Investigation
Foster and Freeman Ltd.
Gendarmerie Nationale
Gendarmerie Nationale, PJGN, Institut de Recherche Criminelle
Hellenic Police, Forensic Science Division
Institute of Forensic Science, Ministry of Interior of the Slovak Republic
Institute of Legal Medicine, University Hospital Schleswig-Holstein
Israel National Police
KEMEA
Lausanne University (UNIL/ESC) and Lausanne Hospital (CHUV/CURML)
Leverhulme Research Center for Forensic Science, University of Dundee
Lund University
National Institute for Criminalistics and Criminology
Netherlands Forensic Institute
Netherlands Forensic Institute, Leiden University
Northumbria University
Optimal Systems
Polícia Judiciária
RIS Carabinieri Force
School of Criminal Justice (ESC)
Scottish Police Authority Forensic Services
Service National de Police Scientifique/laboratoire de Police Scientifique
Spectricon
Swedish National Forensic Centre
Swedish Police Authority, Stockholm Police Region
The University of Twente
United Nations Office on Drugs and Crime
Université du Québec à Trois-Rivières
University College London (UCL)
University of Dundee
University of Lausanne
Victoria Police Forensic Services Department
Wetenschappelijk Onderzoek- en Documentatiecentrum (WODC)

### 3 Workshop Content

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Jaap van der Weerd prepared the pre-recorded lecture “From SHUTTLE to Lorentz” which explains the rationale for the workshop and the link with the SHUTTLE project. This video along with the other pre-recorded lectures was made available to registered participants before the workshop.

Part of the second day of the workshop was dedicated to the theme “Technical Developments and Automation”. It is expected by the Workshop Organisation Committee that more homogenous procedures would pave the way for the introduction of new technology and conversely, that implementation of new technologies would potentially impact procedures. In this session, a number of new developments and their consequences for trace finding were explored. Live presentations followed by discussion were given by the SHUTTLE Coordinator and the contractors, as well as by two other technology developers unrelated to SHUTTLE.

#### 3.1 SHUTTLE Presentations

The session on Technical Developments and Automation was opened with a welcome by the SHUTTLE EC Project Officer, Aikaterini-Marina Kyrieri.

To provide a first orientation on the project, the newly produced project video was shown:

<https://www.youtube.com/watch?v=jBpZjjRvqWU>

The Project Coordinator, Gregory Briche, IRCGN, Gendarmerie Nationale, and Nadine Merat, Police Scientifique, presented “The SHUTTLE Machine+Toolkit: Common Challenge”, providing a more in-depth overview of the project objectives, consortium and progress to date.

The three contractors, currently developing prototypes in PCP Phase 2, then presented their work followed by question and answer periods.

##### 3.1.1 SHUTTLE Contractor: TRACES Consortium

Dr. Costas Balas, Spectricon, presented the TRACES Consortium prototype.

Dr. Balas responded to participants’ questions:

- Could you use your prototype at a crime scene?
  - It is intended for laboratory use but it could potentially be put in a van.
- Are there features that allow cleaning of the equipment?
  - Yes, the equipment is cleanable to eliminate contamination.
- Is it possible to scan curved or irregular surfaces or only tapes?
  - The lens has a working distance of 2 cm, plus the system has a high focal length for minimum refocusing.
- In our process, we don’t use tape lifts as much. Could you line up glass microscope slides for scanning?
  - Yes, the system also works with conventional microscope slides.
- What do you use for training sets?
  - We bought a collection and enriched it with paints, glass, fibres, cells, etc.
- What about degraded or contaminated samples? Any issue?
  - Our approach is to develop the database for “perfect” samples, then to identify difficult situations from forensic labs.

##### 3.1.2 SHUTTLE Contractor: AG SHUTTLE Toolkit Jena

Dr. Ute Müller, aura-optik, presented the AG SHUTTLE Toolkit Jena prototype.

Dr. Müller responded to participants’ questions:

- Some evidence items don’t lend themselves to tape lifts.

- Our system can be adapted to glass microscope plates.
- The SHUTTLE specifications for the prototypes include processing of tapes.
- U. Müller: Could forensic labs share material for the database (testing)?
  - We have strict privacy laws, but if stripped of case data, then yes.
- I can see the possibility to link cases in a database (in use) that were never thought of to link before.
- What would happen for recovery of many layers of paint?
  - First step is trace finding then analysis.
  - The correct spectral range is needed to view the sample.

### 3.1.3 SHUTTLE Contractor: Clyde HSI

Dr. John Gilchrist, Clyde HSI, presented the Clyde HSI prototype.

Dr. Gilchrist responded to participants' questions:

- Your actual crime scene (in presentation) was hypothetical?
  - No, it's a true hyperspectral image of that crime scene. We didn't tape anything to get the image in the microscope; we have a hyperspectral camera to visualise materials in a lift.
- It's a powerful use of the technology.
- You spoke of two hyperspectral cameras. How much time is needed for image acquisition?
  - Both cameras run simultaneously. The field of view depends on the objective lens. For the A4 sized target in SHUTTLE, it takes two hours at the highest resolution.
- Can you give us an idea of cost? Such equipment may need to be centralised in a laboratory network.
  - The cost depends on the complexity of the instrument. It is designed to be highly modular. A small hyperspectral camera is less than £10,000. Calibration is critical.
- How is the birefringence measured without the thickness? Or is the thickness measured somehow?
  - The thickness is measured.
  - Not sure that is feasible. The specifications require measurement of the retardance. Diameter (if round) can be assessed from the image.
  - It is the retardance that is measured and is specified by the SHUTTLE requirements. To get the refractive index you need the thickness. The thickness is assumed to be the same as the width of the fibre and the fibre is assumed to be round.

## 4 Workshop Outcomes

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In this workshop, forensic investigators and experts in related fields explored the current environment and worked towards a draft for cross-discipline best practices. Participants took current scientific insights and technological developments into account and identified obstacles that may hinder implementation of best practices as well as measures to mitigate them.

In terms of the aims specific to SHUTTLE, the workshop is considered successful and contributed to promoting the uptake of the SHUTTLE results and their future sustainability.

### **Building the SHUTTLE network and community of interested stakeholders and potential users**

The participants who attended the workshop were highly relevant for SHUTTLE, being primarily from police and forensic labs of several European countries, as well as research and academia, and a few technology suppliers. As such, the participant profiles align closely with the target audiences for SHUTTLE workshops defined in the dissemination plan. The responses to the SHUTTLE presentations were positive and the interaction between SHUTTLE contractors and the other participants was strong, as evidenced by the question and answer periods. A follow-up survey will be sent to participants which includes asking consent to be contacted for invitation to future SHUTTLE public events, such as the final conference.

### **Creating awareness among forensic laboratories of the SHUTTLE machine + toolkit**

This objective is achieved through the SHUTTLE video, overview presentation by the Coordinator, and especially the presentations of prototypes under development given by the SHUTTLE contractors. As the SHUTTLE Pre-Commercial Procurement is currently in Phase 2 – prototype development, the timing of this workshop allowed a first opportunity to present the work in progress by the three contractors in some technical detail and obtain feedback from potential end-users.

### **Addressing the Common Challenge identified in SHUTTLE**

A long term aim of the SHUTTLE project is to lay the groundwork for commercial introduction of the SHUTTLE machine+toolkit. Homogenization of methodology and Quality Assurance accreditation among forensic laboratories are seen by the project partners as important for the successful implementation of the SHUTTLE machine+toolkit (or other new technologies) as well as for further improving cross-laboratory and cross-border collaboration with a positive impact on criminal justice outcomes. The workshop participants, including those from the SHUTTLE partners and contractors, held a series of small group discussions on the themes of comparing recovery procedures, exploring quality systems and judicial systems, future collaborations and R&D, and considerations for drafting a generic trace recovery procedure. A summary of the outcomes of these discussions will be prepared by the Workshop Organisation Committee and provided to the participants. Progress was made, however it was also recognised at the outset that this ambitious, cross-discipline effort would require further work, probably in the form of a follow-on workshop.



## 5 Conclusion

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The first SHUTTLE public workshop gave the opportunity for technology developers to get informed regarding the Call for Tender launched in September 2019.

This second public workshop served to build the SHUTTLE community of interested stakeholders, create greater awareness among potential end-users, and start to address some of the issues related to future implementation of new technology in the trace recovery processes.

SHUTTLE will hold a final conference toward the project end (April 2022) and include prototype demonstrations and assessment of results.

## Annex A – Workshop Program



### Workshop Program

<b>Date of the Workshop</b>	1 <sup>st</sup> , 2 <sup>nd</sup> and 5 <sup>th</sup> February 2021
<b>Location</b>	Virtual workshop using MS Teams
<b>Host</b>	Lorentz Center with support of the SHUTTLE Project
<b>Workshop Organisation Committee</b>	Iris Bijker, AUAS, The Netherlands Rebecca Bucht, NBI, Finland Jan Grunwald, BLKA Munich, Germany Bas Kokshoorn, NFI, The Netherlands Jaap van der Weerd, NFI, The Netherlands

<b>Filing Code</b>	Program_ImprovingForensicTraceRecovery_R1.4
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#### Document History

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R1.1	11/12/2020	Preliminary program	Draft	Expected participants
R1.2	26/01/2021	Updated program	Final	Registered participants
R1.3	29/01/2021	Updated links to pre-recorded lectures and participants list	Final	Registered participants
R1.4	01/02/2021	Updated links to pre-recorded lectures, lists of lectures & participants	Final	Registered participants



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## 1 Workshop objectives

Current forensic methods have an incredible sensitivity. Minute traces, often invisible to the bare eye, allow for a full analysis. Only a few cells yield a full DNA profile; a single fibre suffices to identify the fibre type as well as the dyes used for its coloration; the elemental composition of glass shards smaller than 100µm is now analysed on a routine basis in forensic laboratories.

However, before a forensic expert can examine a trace, it needs to be recovered. Unfortunately, the procedures for recovery of traces are heterogeneous: experts in different forensic disciplines and in different laboratories use different methods. Sometimes, such methods are not compatible, and recovery of one type of trace may destroy other traces. Heterogeneity also hinders scientific studies into the behaviour of traces, accreditation of new technology, and international cooperation.

In this workshop, forensic investigators and experts in related fields will explore the current environment and work towards a draft for cross-discipline best practices. They will take current scientific insights and technological developments into account. In addition, obstacles that may hinder implementation of best practices will be identified as well as measures to mitigate them. Finally, participants will explore the possibilities opened by the workshop, such as improved collaboration and joint research projects.

## 2 Inputs to be prepared

Specific participants have been asked to prepare pre-recorded lectures as input for working sessions.

All participants are asked to:

- Prepare a 40-60 second video introducing yourself (updated deadline January 22<sup>nd</sup> 2021).
- View the pre-recorded lectures and read the scientific papers (links provided in this final program) before each day's workshop.
- Complete the survey questions by Friday 29<sup>th</sup> January:
  - [General information](#)
  - [Recovery procedures](#)
  - [Exploring Q systems](#)
  - [Exploring judicial systems](#)

## 3 Detailed program

### 3.1 Legend

All times indicated in the program are CET — Central European Time (UTC + 1). The work formats of the different sessions are summarized in the table below. They are color coded for easy reference.

Pre-recorded lectures	Lectures will be pre-recorded well before the start of the workshop. Participants will receive links to view these lectures in advance.
Plenary sessions	These sessions will be plenary discussions in which all participants join. Plenary sessions are kept to a minimum and reserved for sessions that cannot be prepared before the actual workshop.
Working sessions	Participants will be placed in small (6-8 person) working groups in online breakout rooms. These groups will each have a discussion leader, a clear goal, and tangible outputs to be produced.
Feedback sessions	Feedback sessions will be held in a plenary format to combine and review the findings of the small working groups.

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### 3.2 Monday, 1<sup>st</sup> February 2021

#### 3.2.1 Pre-recorded lectures

As input to Monday's sessions, the following pre-recorded lectures have been prepared and should be viewed by all workshop participants before Monday 13:30 pm.

Please use the following link to access the video files on Research Drive. You will have received a password by email from the Lorentz Center:

<https://universiteitleiden.data.surfsara.nl/index.php/s/Zom0WmcQghJk4TB/authenticate>

If you have comments or questions on a pre-recorded lecture, you can post them in MS Teams on the wiki page of the [Pre-recorded lectures channel](#). Click the "conversation" icon to post your comment and use "@+their name" to notify a participant of your comment so they can respond. See section 5.1 MS Teams for details.

Theme 1. Getting to Know Each Other			
<i>General introduction to the Lorentz centre, the workshop participants, and the aims of the workshop.</i>			
Duration	Topic	Format	Speaker
45	Participant Introductions	Lecture	All Participants
<i>To get to know the participants you will be working with during the workshop, you are invited to watch the personal introduction videos. (If 50+ videos is too much, please watch at least those from the participants in your subgroups.)</i>			
10	From SHUTTLE to Lorentz	Lecture	Jaap van der Weerd, Netherlands Forensic Institute
<i>Introduction to the workshop, including the link to the SHUTTLE project</i>			
30	Here Comes a Brave New (Forensic) World? – The Example of Microtraces	Lecture	Claude Roux, University of Technology Sydney
<i>Introductory review lecture</i>			
20	The Integrity of Trace Evidence	Lecture	Mikle van der Scheer, Netherlands Forensic Institute
<i>Introduction to current procedures at the DNA department in NFI</i>			

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### 3.2.2 Virtual workshop

Monday afternoon via MS Teams: [Plenary Room @Oort Lorentz](#)

Monday pm	<b>Theme 2. Environment: Current Procedures</b> <i>The purpose of this session is to know the different procedures accepted in different laboratories as well as the motivation for these procedures.</i>			
13.30-13.40	10	<b>Welcome and Session Introduction</b>	Plenary	Lorentz Center & Organising Committee
		<i>Short lecture to introduce the aims and organisation of today's sessions</i>		
13.40-14.40	60	<b>Exploring Procedures</b>	Working session	Subgroups
		<i>Material: Several participants have been asked pre-workshop survey questions on their recovery procedures.</i> <i>Organisation: All participants will be divided into groups and each group will discuss (in breakout rooms) procedures from different countries.</i> <i>Output: Each group will make a list of the similarities and differences they observe between countries.</i>		
14.40 – 15.00	20	<i>Coffee break</i>		
15.00 – 16.30	90	<b>Comparing the Lists</b>	Feedback session	Discussion Leaders
		<i>Coming back to a plenary session, we will discuss and compile an overview of similarities and differences among countries in trace evidence recovery procedures.</i>		
16.30 – 17.15	15	<i>Coffee break</i>		
16.45 – 17.15	30	<b>Consolidation of lists</b>	Feedback session	Organising Committee
		<i>Show the consolidated output: A complete overview of trace evidence recovery procedures.</i>		
17.15-18.15	60	<b>Welcome reception</b> <i>See section 5.4 Social Event for link and details</i>		



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### 3.3 Tuesday, 2<sup>nd</sup> February 2021

#### 3.3.1 Pre-recorded lectures

As input to Tuesday's sessions, the following pre-recorded lectures have been prepared and should be viewed by all workshop participants before Tuesday 13:30 pm.

Please use the following link to access the video files on Research Drive. You will have received a password by email from the Lorentz Center:

<https://universiteitleiden.data.surfsara.nl/index.php/s/Zom0WmcQghJk4TB/authenticate>

#### Theme 3. Environment: The Scientific Perspective

*Trace finding is mainly carried out by examiners and hence a subjective task. This session will explore different perspectives on the role of the examiner and their implications for future recovery procedures. Lectures in this session are not meant as an overview, rather as short summaries of work carried out followed by personal views on the implication of the research for devising an optimal procedure. These lectures explore the science involved in trace recovery, addressing the basics of trace finding, the role of bias, etc.*

Duration	Topic	Format	Speaker
25	Is Forensics a Forensic Science?	Lecture	Frank Crispino, Université du Québec à Trois-Rivières
30	10 Years of 1:1 Taping in Belgium	Lecture	Laurent Lepot, National Institute for Criminalistics and Criminology
30	Criminalistics	Lecture	Charles Berger, Netherlands Forensic Institute, Leiden University
20	Finding Evidence with Prior Knowledge	Lecture	Claire van den Eeden, Police Academy of the Netherlands

#### Theme 4. Environment: Embedding

*This session aims to explore the different quality systems that end users operate in and the implications of these systems for the recovery procedures that can be used.*

*Quality accreditation is an important aspect here. Many labs are accredited and procedures that are followed should fit in the accreditation scheme. Different laboratories can have different accreditation schemes. This session will introduce quality and accreditation and provide thoughts on the requirements for recovery techniques to fit in a specific scheme.*

*Also, the judicial system is important aspect. Reports may have to be adjusted to the requirements of the prosecutors. Recovery procedures may have to be aligned with the local regulations (either written or implicit) with police forces.*

	Material on Quality Systems: Summary of ISO Standards and Forensic Science	Document	Rebecca Bucht, National Bureau of Investigation, Finnish Police
30	Crime Scene Analysis and Reporting: Expectations and Demands of the Judicial System	Lecture	Christian Dahlman, Lund University & Anders Nordgaard, National Forensic Center, Sweden

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### 3.3.2 Virtual workshop

Tuesday afternoon via MS Teams: [Plenary Room @Oort Lorentz](#)

Tuesday pm	<b>Theme 4. Environment: Quality Assurance</b> <i>This session initiates the discussion on quality systems that end users operate in and the implications of these systems for the recovery procedures that can be used.</i>			
13.30-13.40	10	Introduction	Plenary session	Organising Committee
Introduction to the aims and organisation of today's sessions				
13.40-15.10 Parallel session I	90	Exploring Q Systems	Working session	Subgroups
<i>Material: Several participants will be asked to answer questions in advance on the embedding of their procedures in an accreditation scheme. The organizing committee will combine these to provide an overview.</i> <i>Organisation: All participants will be divided into groups and each group will discuss (in breakout rooms) the overview and name three striking features, focusing on the implications for procedures to be developed.</i> <i>Output: Each group will make a list of the striking features observed.</i>				
13.40-15.10 Parallel session II	90	Exploring Judicial Systems	Working session	Subgroups
<i>Material: Several participants will be asked to answer questions in advance on the embedding of their work in their local judicial system (police, prosecutor, court, etc.). The organizing committee will combine these to provide an overview.</i> <i>Organisation: All participants will be divided into groups and each group will discuss (in breakout rooms) the overview and name three striking features, focusing on the implications for procedures to be developed.</i> <i>Output: Each group will make a list of the striking features observed.</i>				
15.10 – 15.25	15	Coffee break		
<b>Theme 5. Environment: Technical Developments and Automation</b> <i>More homogenous procedures would pave the way for the introduction of new technology. In this session, we will explore a number of new developments and their consequences for trace finding. Speakers may illustrate their development in a short (10 minute) presentation, preferably with video demonstration, followed by a Question &amp; Answer session.</i>				
15.25-15.55	The SHUTTLE Machine+Toolkit: Common Challenge		Plenary session	Gregory Briche, IRCGN, Gendarmerie Nationale and Nadine Merat, Police Scientifique
15.55-16.10	SHUTTLE Contractor: TRACES Consortium		Plenary session	Dr. Costas Balas, Spectricon
16.10-16.25	SHUTTLE Contractor: AG SHUTTLE Toolkit Jena		Plenary session	Alexander Werner, Optimal Systems, and Dr.



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			Roland Kilper, aura optik
16.25-16.40	SHUTTLE Contractor: Clyde HSI	Plenary session	Dr. John Gilchrist, Clyde HSI
16.40-16.55	FreeRef 2	Plenary session	Arjo Loeve, Delft University of Technology
16.55-17.10	TBD	Plenary session	Roberto King, Foster and Freeman Ltd.

### 3.4 Friday, 5<sup>th</sup> February 2021

#### 3.4.1 Pre-recorded lectures

As input to Friday's sessions, the following pre-recorded lectures have been prepared and should be viewed by all workshop participants before Friday 13:30 pm.

Please use the following link to access the video files on Research Drive. You will have received a password by email from the Lorentz Center:

<https://universiteitleiden.data.surfsara.nl/index.php/s/Zom0WmcQghJk4TB/authenticate>

Links to any additional materials are provided below.

<b>Theme 6. Into the Future</b> <i>More homogenous procedures would pave the way for the introduction of new collaborations as well as technology. In this session, we will explore the impact of new developments and their consequences for trace finding.</i> <i>The following workshop sessions will evaluate the proposed ideas, improve them, challenge them, and harvest additional ideas.</i>			
Duration	Topic	Format	Speaker
20	UNODC Laboratory and Scientific Services – Considerations for Best Practices	Lecture	Melinda Mancebo, United Nations Office on Drugs and Crime
30	Human Factors in CSI Decision Making Please read the following paper before viewing this lecture: <a href="#">Cognitive and Human Factors in Expert Decision Making: Six Fallacies and the Eight Sources of Bias.</a>	Lecture	Itiel Dror, University College London, Cognitive Consultants International
30	What can we learn from the past?	Lecture	Sheila Willis, Fellow Leverhulme Research Center for Forensic Science, University of Dundee

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### 3.4.2 Virtual workshop

Friday afternoon via MS Teams: [Plenary Room @Oort Lorentz](#)

Friday pm	<b>Theme 4. Embedding &amp; Quality Assurance (continued)</b> <i>The discussion leaders that participated in the Tuesday sessions will report back, focusing on the implications of the explored topics for the procedures to be developed.</i>			
13.30-14.30	60	Comparing observations on striking features and their implications	Feedback session	Discussion Leaders
<i>Discussion Leaders will give an overview of the striking features per category (5 to 10 minute presentations) followed by a discussion on similarities and differences between the groups.</i> <i>(Small break)</i> <i>Show the consolidated output: Bringing the results of the two previous afternoons together.</i>				
<b>Theme 7. Building the Future</b> <i>These parallel sessions provide extra focus on three main topics to be addressed when drafting a generic procedure and a roadmap towards implementation. Three groups, based on background, will summarize considerations, both obstacles and opportunities, when it comes to needed R&amp;D, potential collaborations and integration. These summaries, together with the outputs produced on previous days, will be the starting point for a follow-on workshop next year. Outputs will be made available to all workshop participants.</i>				
14.30-14.40	10	Introduction	Plenary session	Organizing Committee
<i>Introduction to the aims and organisation of today's parallel sessions</i>				
14.40-15.50 Parallel session I	110	Research & Development	Working session	Subgroups
<i>Material: The pre-recorded lectures, particularly Theme 3. Environment: The Scientific Perspective, Theme 5. Environment: Technical Developments and Automation and Theme 6. Into the Future</i> <i>Organization: All participants will be divided into groups (in breakout rooms) and each group will outline project plans for necessary R&amp;D.</i> <i>Output: List of necessary R&amp;D</i>				
14.40-15.50 Parallel session II	110	Collaboration	Working session	Subgroups
<i>Material: Ideas collected from previous sessions</i> <i>Organization: All participants will be divided into groups (in breakout rooms) and each group will outline project plans to improve collaboration.</i> <i>Output: List of plans to improve collaboration</i>				
14.40-15.50 Parallel session III	110	Drafting a Generic Procedure	Working session	Subgroups
<i>Material: Outputs from Day 1 – Overview of trace recovery procedures and above feedback session</i> <i>Organisation: All participants will be divided into groups (in breakout rooms)</i>				

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		<i>and each group will sketch a first draft that may form the basis for a generic procedure.</i> <i>Output: Draft proposals for forming the basis of a generic procedure.</i>		
15.50-16.05	15	Coffee break		
16.05-17.20	75	Closing	Feedback session	Organizing Committee
		<i>Discussion Leaders will give a brief "hot" feedback of main points from previous parallel sessions.</i> <i>Closing messages from the organizing committee summarizing the outcomes of the workshop and outlining the next steps identified for the coming year, including a follow-on workshop to advance implementation.</i> <i>Feedback from all participants on workshop achievements and the next steps.</i>		

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#### 4 Registered participants and the subgroups (Breakout Rooms)

The following persons have registered for the workshop. The composition of the working session subgroups is given for Monday in the table below. The table will be updated with the composition of Tuesday and Friday's subgroups based on the survey responses.

Links to Breakout Room (BR) channels:

[Breakout Room 1](#)

[Breakout Room 2](#)

[Breakout Room 3](#)

[Breakout Room 4](#)

[Breakout Room 5](#)

[Breakout Room 6](#)

Last name	First name	Organisation	Country	Mon 13h40-14h40 Exploring Procedures (BR 1-6)
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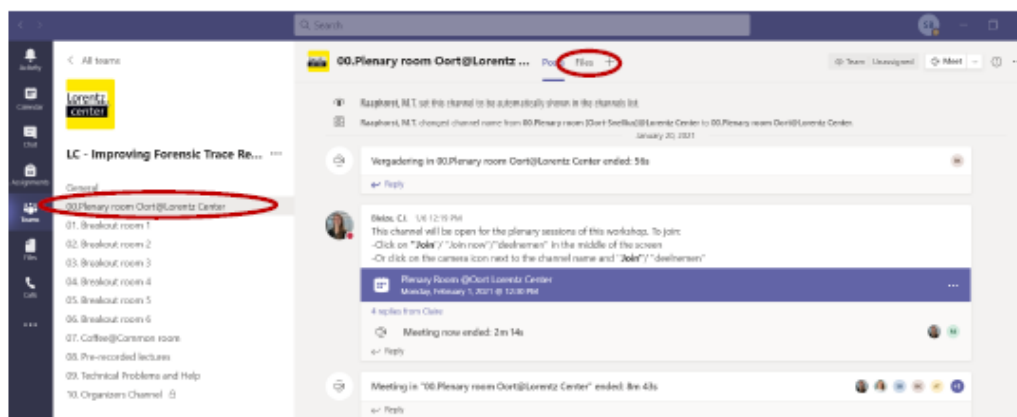
## 5 Logistics

### 5.1 MS Teams

The Microsoft Teams application will be used for the workshop. It is important that all participants have MS Teams downloaded on their devices, preferably the latest version.

The Lorentz Center will provide IT support from 09:00 until 17:00. During the workshop, chat your question to "@support" to ask for help or send an e-mail to [MSTeamsSupport@lorentzcenter.nl](mailto:MSTeamsSupport@lorentzcenter.nl)

Outside the workshop times, contact the Lorentz Center workshop coordinator, Claire Bleize : [bleize@lorentzcenter.nl](mailto:bleize@lorentzcenter.nl)



The plenary sessions will take place in the channel "Plenary room Oort@Lorentz". To join:

- Click on "Join"/ "Join now"/ "deelnemen" in the middle of the screen
- Or click on the camera icon next to the channel name and "Join"/ "deelnemen"

Workshop files for all participants are stored under "files" in "Plenary room Oort@Lorentz" (latest program, etc).

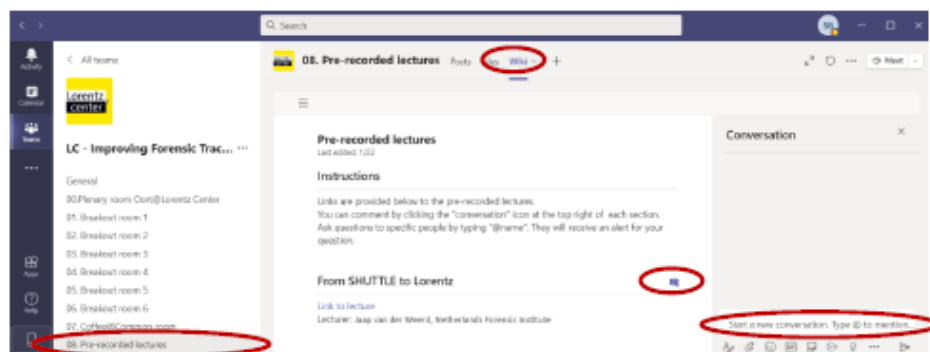
The subgroups will meet in their numbered "Breakout Room". During the scheduled working session times, participants can go directly to their breakout room to join the meeting (see section 4 for subgroup assignments and links):

- Click on "Join"/ "Join now"/ "deelnemen" in the middle of the screen
- Or click on the camera icon next to the channel name and "Join"/ "deelnemen"

Files specific to each breakout room are stored under "files" in the "Breakout rooms" (templates, work product, discussion notes, etc.).

A directory of the pre-recorded lectures is available in channel "Pre-recorded lectures" under "wiki" to facilitate discussion on the lectures. If you have comments or questions on a pre-recorded lecture, you can post them on the wiki page of the [Pre-recorded lectures channel](#). Click the "conversation" icon to post your comment and use "@+their name" to notify a participant of your comment so they can respond.

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## 5.2 Online File-sharing Platform

The Lorentz Center provides access to a separate online file sharing platform for the pre-recorded lectures, called Research Drive. The online platform is accessible to workshop participants and organisers only. Access is granted through personal username and password. Nevertheless, please do not include Restricted information.

## 5.3 Confidentiality and Photo/Video Policy

Participants are asked to keep workshop documents strictly confidential and to not record or share the workshop materials, including pre-recorded lectures, scientific papers, presentations, and working session outputs, unless expressly agreed by the owner(s) of the material.

## 5.4 Social Event

The application “Wonder” will be used for the Welcome Reception and will also be available during the coffee breaks. This application allows participants to socialize virtually in an informal manner. When you move your avatar close to another avatar, a video chat opens, allowing you to have a conversation. Many participants can navigate the same “virtual coffee room”, joining conversations and leaving them at will.

Instructions: First, turn off your camera and microphone. Use browser Chrome or Firefox. Please follow the link to your virtual coffee room in Wonder <https://www.wonder.me/r?id=ivj22y-ogzwa>. Password = lorentz

When you enter the room, you can move around by clicking and holding your mouse in the direction you want to go. When close enough to fellow participants, a colored circle will appear and you will be able to talk to them. You can change the picture of your avatar by clicking on the settings icon on the right side of the screen.

If you experience difficulties, you can close Microsoft Teams and after this: open the link in your Chrome or Firefox browser. Please don't forget, when it is time, to close the Wonder Room and head back to Microsoft Teams for your workshop.

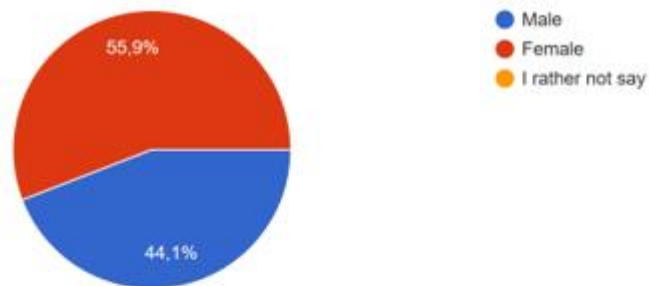
## Annex B – Survey Results

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### General Information

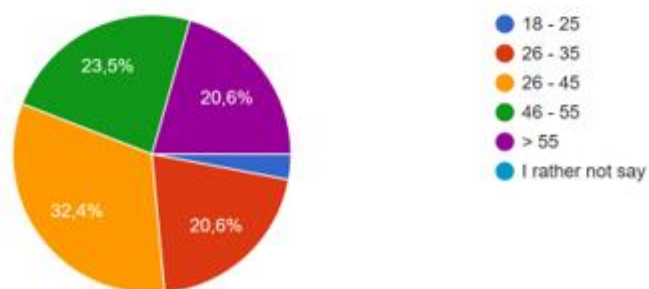
1. What is your gender?

34 antwoorden



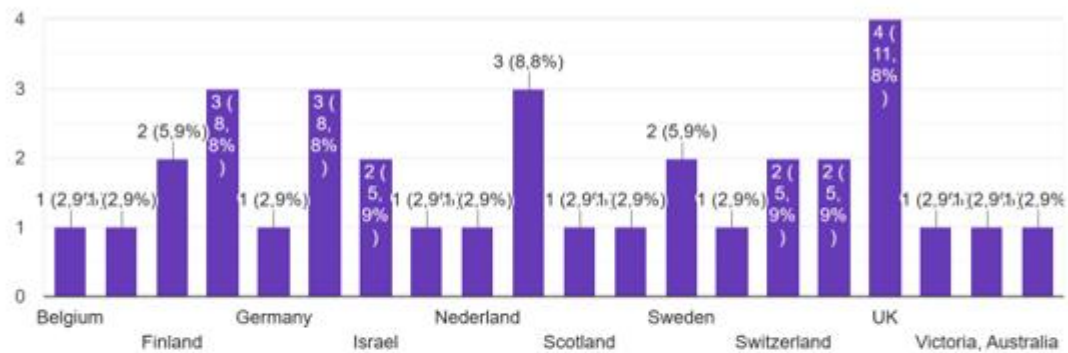
2. In which age category do you belong

34 antwoorden



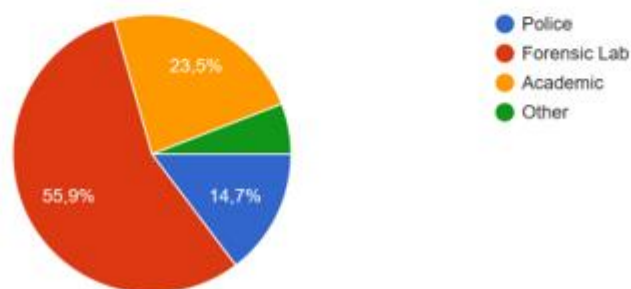
### 3. What country do you represent?

34 antwoorden



### 4. In what area do you currently work?

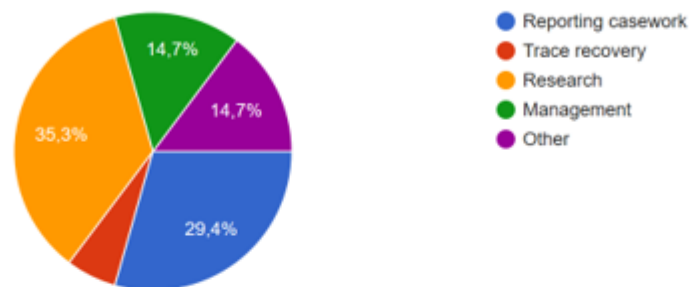
34 antwoorden





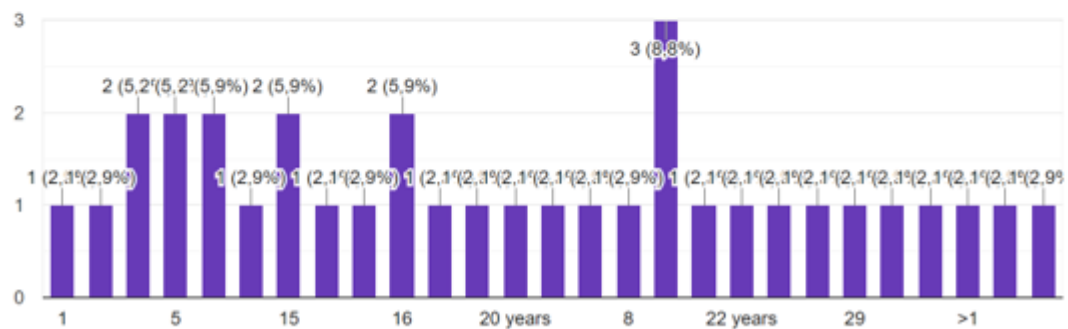
## 5. What is your main function?

34 antwoorden



## 6. How many years experience do you have in the forensic field?

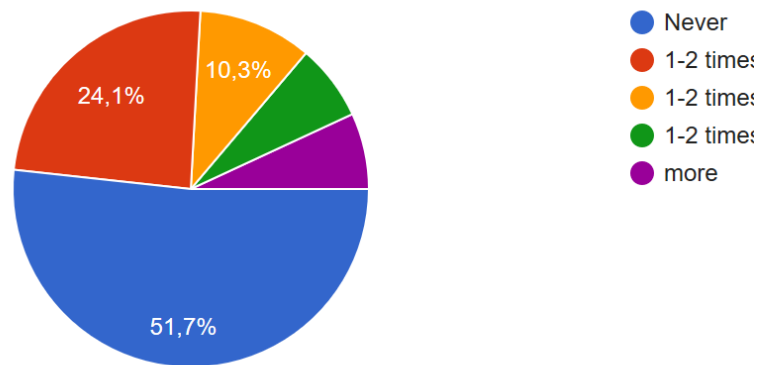
34 antwoorden



## Exploring Trace Recovery Procedures

### 1. Are you actively involved in crime scene work?

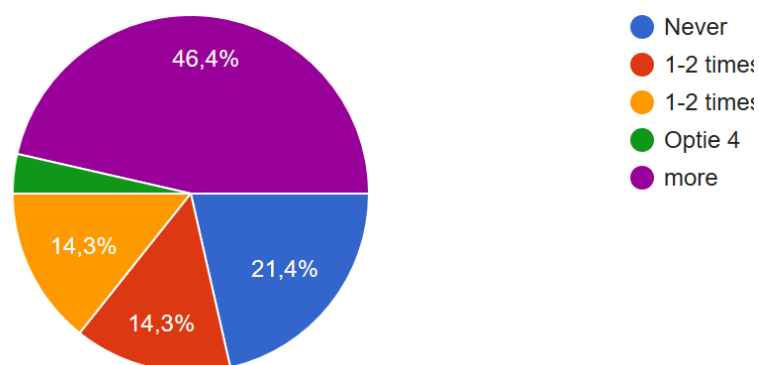
29 antwoorden



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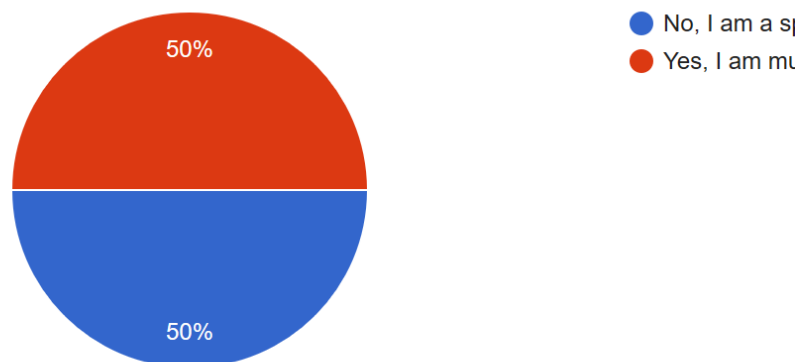
### 2. Are you actively involved in laboratory based recovery of traces?

28 antwoorden



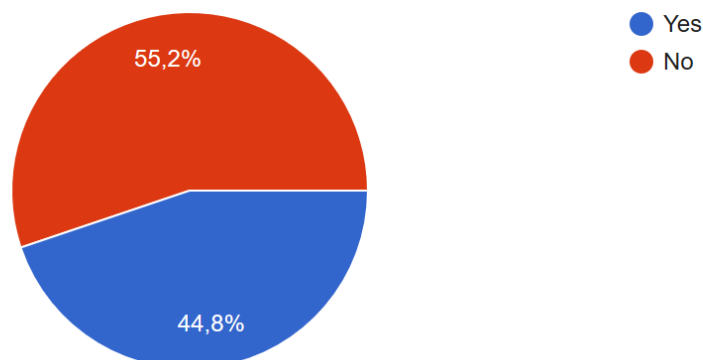
j. Do you generally collect various type of traces (e.g. GSR, fibres, DNA, paint)?

8 antwoorden



k. In your country, do laboratory experts attend crime scenes?

9 antwoorden

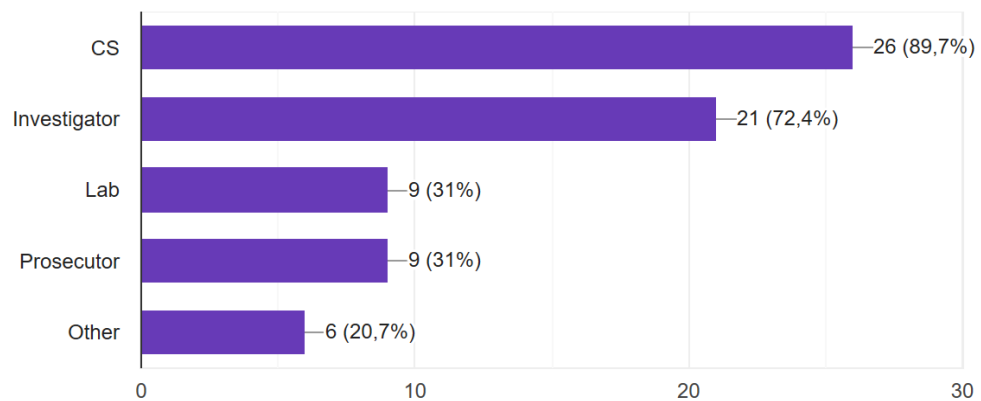


## Standard recovery procedures Where to find them?

Guidelines / document (in quality systems) - 12  
In the lab - 6  
Under revision - 1  
Intranet / websites - 8  
Training - 1  
Only recommendations - 1

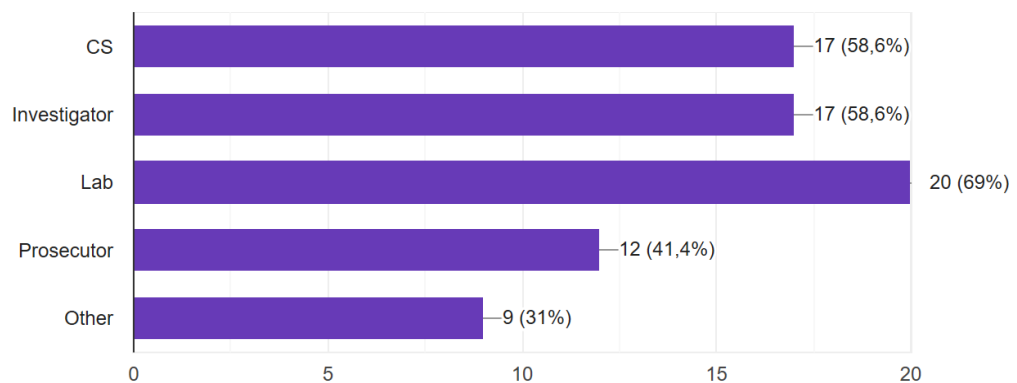
## 9.a Who is involved with the decision of what items are collected?

29 antwoorden



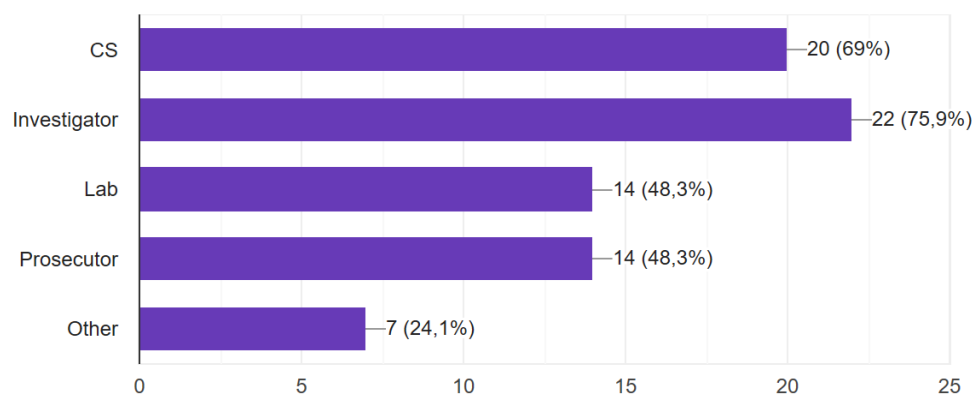
## 10.a Who is involved with the decision of which examinations are performed?

29 antwoorden



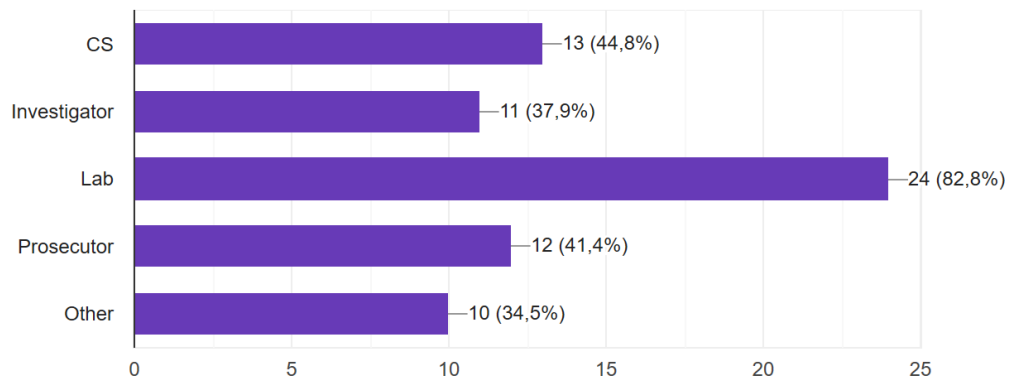
## 11.a Who is involved with the decision of what items are sent to the lab?

29 antwoorden



## 12.a Who is involved with the decision of what examinations are performed?

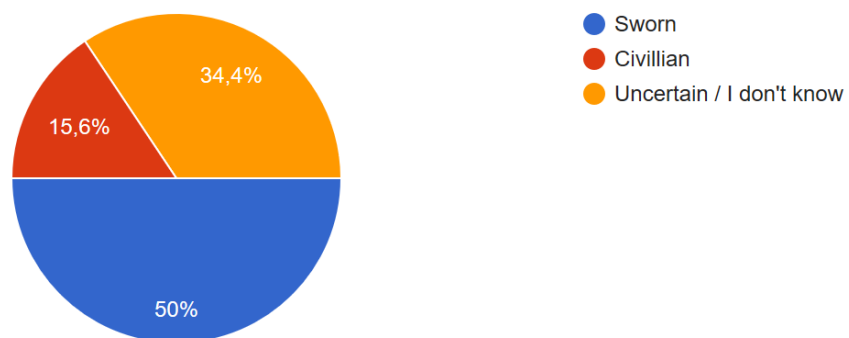
29 antwoorden



## Exploring Quality Systems

## 1. Are crime scene (CS) staff sworn or civilian?

32 antwoorden



## Do CS staff have a scientific education? If yes, what level?

- No - 7
- Bachelor - 2
- Some Msc - 4
- Police school - 2
- Some of them but not necessary - 8
- Sworn - education is mandatory?

## Are you allowed to use non-accredited methods?

- Yes – 23
- No – 6
- Don't know – 3

## Do you feel like accreditation is useful for crimescene work?

- Yes – 23
- No – 3
- Maybe – 6
- Some sidenotes.
- Yes, but difficult.
- Yes, but not sure if accreditation is the way to go.
- Is it realistic to want everything accredited?

## Some insights

- "When you want to use a new method, you need to validate it first. In the validation you compare the results of the current method with the results of the new method. From this research you need to write a report. When the new method turns out best, you need to write an implementation report. Both reports are being saved in the quality system. Than you can start using the method in the casework."

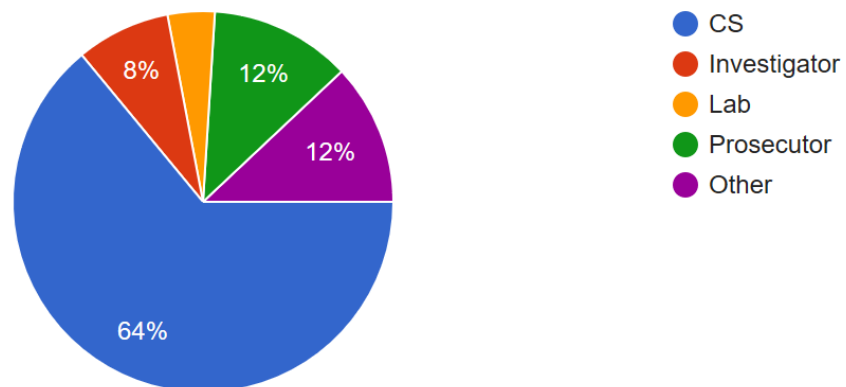
## Some insights

- "Identify the need for a new procedure/method; writing the procedure; reviewing by all practitioners involved; amending the procedure/method; publishing in the QA system; testing (procedure) or validation (method); amending if applicable; accreditation"
- "Suggest a project for new procedure internally, internally validate, present results and validation report, internal review and discussion, write SOP, submit it to quality manager, submit to lab manager, education, add to accreditation scope if method used often."

### Exploring Judicial Systems

#### 1. Who presents the crime scene work to the court?

25 antwoorden



#### 4. In what form is the crime scene work presented

25 antwoorden

