

Lorentz Center Workshop: Improving Forensic Microtrace Recovery

Workshop Program

Date of the Workshop	1 st , 2 nd and 5 th February 2021
Location	Virtual workshop using MS Teams
Host	Lorentz Center with support of the SHUTTLE Project
Workshop Organisation Committee	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

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Document History

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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 (deadline January 11th 2021). You don't need profession recording quality; a simple smart phone recording suffices. If a video is not possible, please provide a single PowerPoint slide with a voice over. This can be done easily with the "record slideshow" function. Please present your name, affiliation, discipline, and motivation for the workshop. The videos will be available to registered participants only.
- View the pre-recorded lectures and read the scientific papers (links will be provided in the final program) before each day's workshop.

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.

3.2 Monday, 1st 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. Links to the lectures will be provided in the final version of the program.

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
15	Opening from Lorentz Center	Lecture	TBD
<i>Introduction to the Lorentz Centre</i>			
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 participant introductions and the general information based on the surveys. (If 50+ videos is too much, please watch at least those from the participants in your subgroups.)</i>			
20	From SHUTTLE to Lorentz	Lecture	Jaap Van der Weerd, NFI
<i>Introduction on the workshop, including a reference to the SHUTTLE project</i>			
30	Review Lecture	Lecture	TBD
<i>Introductory review lecture(s)</i>			
20	Current Status, Example	Lecture	TBD
<i>Introduction to current procedures at the DNA department in NFI</i>			

3.2.2 Virtual workshop

Monday afternoon via MS Teams: [LINK](#)

Monday pm	Theme 2. Environment: Current Procedures <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	Welcome and Session Introduction	Plenary	Organising Committee
<i>Short lecture to introduce the aims and organisation of today's sessions</i>				
13.40-14.40 (including coffee break)	60	Exploring Procedures	Working session	Subgroups
<i>Material: Several participants have been asked pre-workshop survey questions on their recovery procedures. Organisation: All participants will be divided into groups and each group will discuss (in breakout rooms) procedures from another country. Output: Each group will make a list of the similarities and differences they observe between countries.</i>				
14.40 – 15.00	20	Coffee break		
15.00 – 16.30	90	Comparing the Lists	Feedback session	Organising committee
16.45 – 17.00	<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. (Small break) Show the consolidated output: A complete overview of trace evidence recovery procedures.</i>			
17.15-18.15	60	Welcome reception		

3.3 Tuesday, 2nd 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. Links to the lectures will be provided in the final version of the program.

Theme 3. Environment: The Scientific Perspective			
<i>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 short; They 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.</i>			
Duration	Topic	Format	Speaker
20	Bias and Perspective	Lecture	TBD
20	Factors Influencing Sample Selection	Lecture	TBD
20	Activity Level	Lecture	TBD
20	1:1 Taping	Lecture	TBD
20	TBC	Lecture	TBD
<i>These lectures explore the science involved in trace recovery, addressing the basics of trace finding, the role of bias, etc.</i>			
Theme 4. Environment: Embedding			
<i>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.</i>			
<i>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.</i>			
<i>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.</i>			
30	Lecture on Q	Lecture	TBD
30	Expectations and Demands of the Judicial System	Lecture	TBD

3.3.2 Virtual workshop

Tuesday afternoon via MS Teams: [LINK](#)

Tuesday pm	Theme 4. Environment: Quality Assurance <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
<i>Introduction to the aims and organisation of today's sessions</i>				
13.40-15.10 Parallel session I	90	Exploring Q Systems	Working session	Subgroups
<p><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></p> <p><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></p> <p><i>Output: Each group will make a list of the striking features observed</i></p>				
13.40-15.10 Parallel session II	90	Exploring Judicial Systems	Working session	Subgroups
<p><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></p> <p><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></p> <p><i>Output: Each group will make a list of the striking features observed</i></p>				
Theme 5. Environment: Technical Developments and Automation <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. Additional academic or commercial contributions will be considered. The floor is open to commercial parties that only participate in this session.</i>				
15.20-15.50	The SHUTTLE Machine+Toolkit: Common Challenge		Plenary session	SHUTTLE consortium
15.50-17.00	Pitches and feedback <ul style="list-style-type: none"> • TRACES Consortium • AG SHUTTLE Toolkit Jena • Clyde HSI 		Plenary session	TBD
<i>This session is dedicated to new developments. We expect several speakers that may illustrate their development in a short (10 minute) presentation, preferably with video demonstration, followed by a Question & Answer session.</i>				

3.4 Friday, 5th 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. Links to the lectures will be provided in the final version of the program.

Theme 6. Into the Future

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.

Additional speakers with inspiring, large scale, maybe even radical ideas that require coordination, collaboration and homogenisation will be considered. Contribution of academic participants are foreseen in these lectures, however, commercial contributions will also be accepted, if considered appropriate.

Duration	Topic	Format	Speaker
20	TBD	Lecture	TBD
20	TBD	Lecture	TBD
20	TBD	Lecture	TBD

The following workshop sessions will evaluate the proposed ideas, improve them, challenge them, and harvest additional ideas.

3.4.2 Virtual workshop

Friday afternoon via MS Teams: LINK

Friday pm	Theme 4. Embedding & Quality Assurance (continued) <i>The discussion leaders that participated in the previous 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	Organizing committee
<p><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></p> <p><i>(Small break)</i></p> <p><i>Show the consolidated output: Bringing the results of the two previous afternoons together.</i></p>				
<p>Theme 7. Building the Future</p> <p><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&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></p>				
14.30-14.40	10	Introduction	Plenary session	Organizing committee
<i>Introduction to the aims and organisation of today's parallel sessions</i>				
14.40-16.30	110	Research & Development	Working session	Subgroups
Parallel session I	<p><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></p> <p><i>Organization: All participants will be divided into groups (in breakout rooms) and each group will outline project plans for necessary R&D.</i></p> <p><i>Output: List of necessary R&D</i></p>			
14.40-16.30	110	Collaboration	Working session	Subgroups
Parallel session II	<p><i>Material: Ideas collected from previous sessions</i></p> <p><i>Organization: All participants will be divided into groups (in breakout rooms) and each group will outline project plans to improve collaboration.</i></p> <p><i>Output: List of plans to improve collaboration</i></p>			
14.40-16.30	110	Drafting a Generic Procedure	Working session	Subgroups
Parallel session III	<p><i>Material: Outputs from Day 1 – Overview of trace recovery procedures and above feedback session</i></p> <p><i>Organisation: All participants will be divided into groups (in breakout rooms)</i></p>			

	<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>			
16.30-17.30	60	Closing	Feedback session	Organizing committee
	<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. Feedback from all participants on workshop achievements and the next steps.</i>			

4 Expected participants

To facilitate a productive workshop, approximately 55 participants have been invited, including forensic investigators from different disciplines and countries as well as experts in fields that are relevant to provide the background for the optimal procedure.

5 Logistics

MS Teams

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

Online File-sharing Platform

The Lorentz Center will provide an online file sharing platform for pre-recorded lectures, presentations, working session outputs, etc.

The online platform will be accessible to workshop participants and organisers only. Access will be granted through personal username and password. Nevertheless, please do not include Restricted information.

Confidentiality and Photo/Video Policy

Participants are asked to keep workshop documents 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.

Social Event

Information on Welcome Reception – details to be determined.