practices and identifying research gaps, this study offers an integrative overview of the factors shaping decision-making in trace processing.

12: Scenes of Crime: Implementing New Technologies at Crime Scenes
11:00 - 11:45 Forum

Poster Session Thursday - Scenes of Crime: Implementing New Technologies at Crime Scenes

P4.12.01 **Developing a Methodology for Collecting and Digitizing Data From Land Border Violation Sites Using Unmanned Aircraft Systems as Admissible Evidence** 11:00 - 11:00

A. Puhk[1], A. Raketski[2], T. Pärn[2], V. Gudkova[2], A. Mumma[2], M. Stern[2], Ü. Kustala[3], V. Randma[3], M. Ritari[1]

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Abstract Body: The project for developing of the collecting and digitalising methodology of the data from the land border violation places using Unmanned Aircraft Systems which is suitable as evidence was carried out within the Frontex research grants programme from 1st of September 2023 to 31st of August 2024.

The project was focused on the development of a new methodology for collecting evidence from crime scenes of land border violation in circumstances where communication with neighbouring country is limited or absent with respect to sovereignty of the neighbouring country.
This research activity based on a drone, as the top-down view allows you to look further into a neighbouring country than terrestrial photography.

Experiments or scenarios were created as close to life as possible, at the same time as simple as possible - person(s) cross the border, leaving different traces (shoeprints, impression of backpack and bottle) and using different aids (e.g. a ladder).

During the data colletion processes two methodology were used: data collection with drones and classical forensic methodology (photography). After that data was processed and analysed. In later stages, classical evidence and drone-based collected evidence were compared.

Different aerial vehicles and sensors were tested to gather data under various weather and light conditions in experiments simulating different scenarios of border violation. Tests took place in winter and summer time, from the daytime (maximum light) to the nighttime (low light) and in different locations such as border strip, forest and swamp or bog, for winter also on a frozen lake.

P4.12.02 **Knowledge-Driven Decision-Making at the Crime Scene** 11:00 - 11:00

P. Russel[1,2], C. de Poot[1,3], T. Valkenburg[4], T. van Kleffens[5], R. Ypma[2], B. Kokshoorn[1,2]

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Abstract Body: Decisions made during forensic investigations are commonly based on personal knowledge, experiences and assumptions. However, forensic professionals generally do not receive feedback on the outcomes of their decisions, resulting in a deficient learning system. An imperfect individual knowledge base can lead to suboptimal decisions without professionals in the criminal justice chain being aware of it. In practice, this has led to considerable variation and lack of well-founded knowledge in the first phases of the forensic investigation process.

The desired situation is that forensic professionals can make decisions based on substantiated knowledge, with transparency about the choices made, so that these decisions can be reflected upon by themselves and other actors in the criminal justice process.

The aim of the project is to develop an interactive decision support tool that can assist complex decision-making within the forensic domain. This support tool can enable crime scene investigators to access and utilize data on historic cases, supplemented with results from scientific research. This knowledge can help address questions related to the likelihood of obtaining a DNA profile and its relevance to the crime. In this way, the crime scene investigation will become 'experience-and-evidence-based', meaning that both the valuable experience of crime scene investigators and the rich scientific knowledge derived from historical case data and experiments can be taken into account when making decisions.

P4.12.03 **The RISEN Project – A Novel Concept for Crime Scene Documentation and Trace Qualification** 11:00 - 11:00

R. Chirico[1]

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Abstract Body: Forensic investigations need to be conducted efficiently and accurately, especially in situations where time is a scarce resource. Novel technologies, like 3D re-construction and forensic sensors, can aid investigators in trace detection, visualisation, identification and interpretation on site. In this paper, we present the Real-tIme on-site forenSic tracE qualificatioN (RISEN) H2020 project (grant agreement No. 883116), an innovative concept in forensic investigations (e.g., homicide, clandestine laboratory, sites affected by a terrorist attack with chemical or biological threats). The aim of RISEN is to enhance forensic analyses, allowing investigators to capture data safely, without contaminating the scene, provide timely and completely objective analyses based on highly credible evidence, without missing latent ones, communicate and visualize information securely among relevant stakeholders and have a complete digital record of the scene available for subsequent analyses. An important aspect of documenting a crime scene is to capture all relevant traces and