Summary

Petr Bendl: Use of 3D scanning and modelling in forensic practice

The article explores the application of 3D technology within the Czech police force for crime scene documentation, forensic examinations, and the analysis of criminal incidents.

3D scanners have been in use by the Czech police for approximately 15 years. They are primarily employed in the documentation of serious crimes—such as homicides, large-scale fires, and other major events.

In his article, the author discusses both the use and potential of these technologies. The primary advantage of 3D documentation lies in its precision and the objectivity of the measured data. However, the time required for data processing can occasionally be a drawback.

To demonstrate the practical application of 3D scanning, the article presents several case studies. One particularly notable case is the death of the Czechoslovak Minister of Foreign Affairs on March 10, 1948. Jan Masaryk, the popular minister and son of the first Czechoslovak president, was found dead beneath the windows of his residence. More than 70 years later, the circumstances of his death remain unresolved. The author contributed to the 3D documentation of the scene and conducted an analysis of positional evidence using historical photographs in combination with modern comparison technologies.

Fenyvesi, Csaba – Fábián, Vanessza – Zsák, Zsófia: Criminalistical and criminal procedure law lessons of a knife homicide

This study presents the investigation and judicial phase of a murder case that occurred twenty years ago and has not yet been addressed in the literature. It refers to the turning points before the indictment and during the courtroom proceedings.

The aim of the study is to formulate the most important forensic and criminal procedure law lessons that may still be useful to legal practitioners today.

To achieve this goal, the authors reviewed the documents generated in the case. They analyzed the primary investigative actions, the suspect's interrogation, followed by the crime scene interrogation. Later, they also evaluated the subsequent interrogations of the defendant. The key points of the prosecution's charges were outlined, and the evidence presented by the first-instance court, as well as the reasoning behind the judgment, were examined. Both the prosecution's observations and the defense's appeal arguments were listed, which led to the decision of the appellate court.

The case analysis demonstrates the critical importance of the forensic „first strike" in leading to a successful investigation. A precise crime scene inspection, hot pursuit data collection, rapid searches, and professional interviews bring relevant evidence to the surface. Among them are material pieces of evidence, which – supported by expert opinions – can reinforce the century-old forensic principle: the principle of exchange, the intersection of material traces. These pieces of evidence are far more compelling than polygraph, graphological, or psychological tests with uncertain validity.

The interrogations of the defendant, exemplary in criminal tactics, can discredit any subsequent changes in the defense's narrative.

Overall, every stage of the criminal proceedings conducted twenty years ago contains messages for today's legal practitioners: for investigative authorities and supervising prosecutors, forensic tactics and forensic techniques; and for courts at various levels, an objective and thorough examination of the facts.

Frigyer, László: Service dogs and the regulation of their possible use by the police

Many people may have heard about police service dogs through the media, as they assist law enforcement in numerous areas. However, far fewer possess in-depth professional or legal knowledge on the subject. An untrained observer may not fully grasp the seriousness and responsibility involved in

the care, training, and deployment of service dogs. This is partly because their training and operational use remain shrouded in mystery—representing a „blind spot" in public knowledge, and even for some professionals who lack direct experience in the field.

Hottó, István: Mosaics from the last decade of the former Border Guard

This study provides a comprehensive overview of the transformation of the Hungarian Border Guard from the late 1980s until its integration into the national police in 2008. It traces how the institution evolved from a former armed body responsible for border security into a modern law enforcement agency, adapting to the challenges posed by the regime change, regional conflicts, and accession to the European Union.

The paper examines the effects of changing migration dynamics—especially the increasing number of asylum seekers from the region, armed conflicts in neighboring countries, and the rise of transnational crime—on border protection. It discusses the institutional reforms, the professionalization of personnel, and the technological developments supported by EU programs such as PHARE and COOP, with particular attention to preparations for joining the Schengen Area. The study also highlights the importance of legal harmonization and international cooperation in shaping Hungary's border policy during this period.

Beyond institutional and operational developments, the study reflects on the symbolic and human dimensions of border guarding. The author draws on personal experience as a conscript border guard, having served as a squad leader and supply officer at the Apátistvánfalva post, where he also participated in coordinating its closure. Later, as a civil servant at the Office of the National Assembly in the position of deputy head of department, he witnessed the parliamentary processes related to the integration of the Border Guard. The combination of service-based experience within the Border Guard and insight into the legislative background provides a perspective

that lends both personal authenticity and historical value to the preservation of the institution's memory and legacy.

Petrétei, Dávid: Generative AI at the crime scene?

The report is an essential element of crime scene investigation, even though there are now many other tools available, such as photography, video recordings, and 3D scanning. However, the written word remains crucial, and this is unlikely to change in the future. While electronic devices such as smartphones and tablets are now commonly used in crime scene investigations, they are not always well-suited to the task. Furthermore, the process of typing up a report can be arduous and time-consuming. One potential solution could be the use of generative AI, particularly for generating text. This approach has already been applied to chatbots and customer service applications. While it is not yet suitable for generating images, it could potentially be used in the future to create written reports. However, it is important to ensure that such reports are accurate and reflect reality, rather than simply serving the needs or desires of the investigator. The study was originally presented on the third of October 2024, at the ENFSI Scene of Crime Expert Working Group meeting in Budapest.

Fullár, Alexandra – Fülöp, Péter – Ujvári, Zsolt – Metzger, Máté – Szécsi, András – Varga, Gyula – Varsányi Balogh, Melinda – Petrétei, Dávid: Empirical and virtual experiments: reconstruction of an extraordinary death

This article presents the forensic investigation of a homicide case in which a man pushed his mother-in-law down a staircase and assaulted her further, later claiming the incident was accidental. The multidisciplinary investigation involved experts in trace evidence, physics, and forensic pathology. The team conducted an in-depth analysis of the fall dynamics and bloodstain patterns to reconstruct the events. A 3D model of the scene was

created and used in virtual reality to simulate various fall scenarios, complemented by physical testing with a dummy at the actual location. The comprehensive forensic evaluation disproved the claim of an accident, leading to a conviction. The perpetrator was found guilty of murder and sentenced to 21 years in prison.

Oddvar Moldestad – Kjeld Helland-Hansen: Handsfree documentation on-site to enhance situational awareness and the use of AI for a more cost-effective way of reporting by using speech-to-text

„Jodapro” is a Norwegian software installed on the RealWear Navigator 520 head-mounted camera system. It enables hands-free documentation of crime scene investigations, as well as video conference calls with colleagues who are not present at the scene.