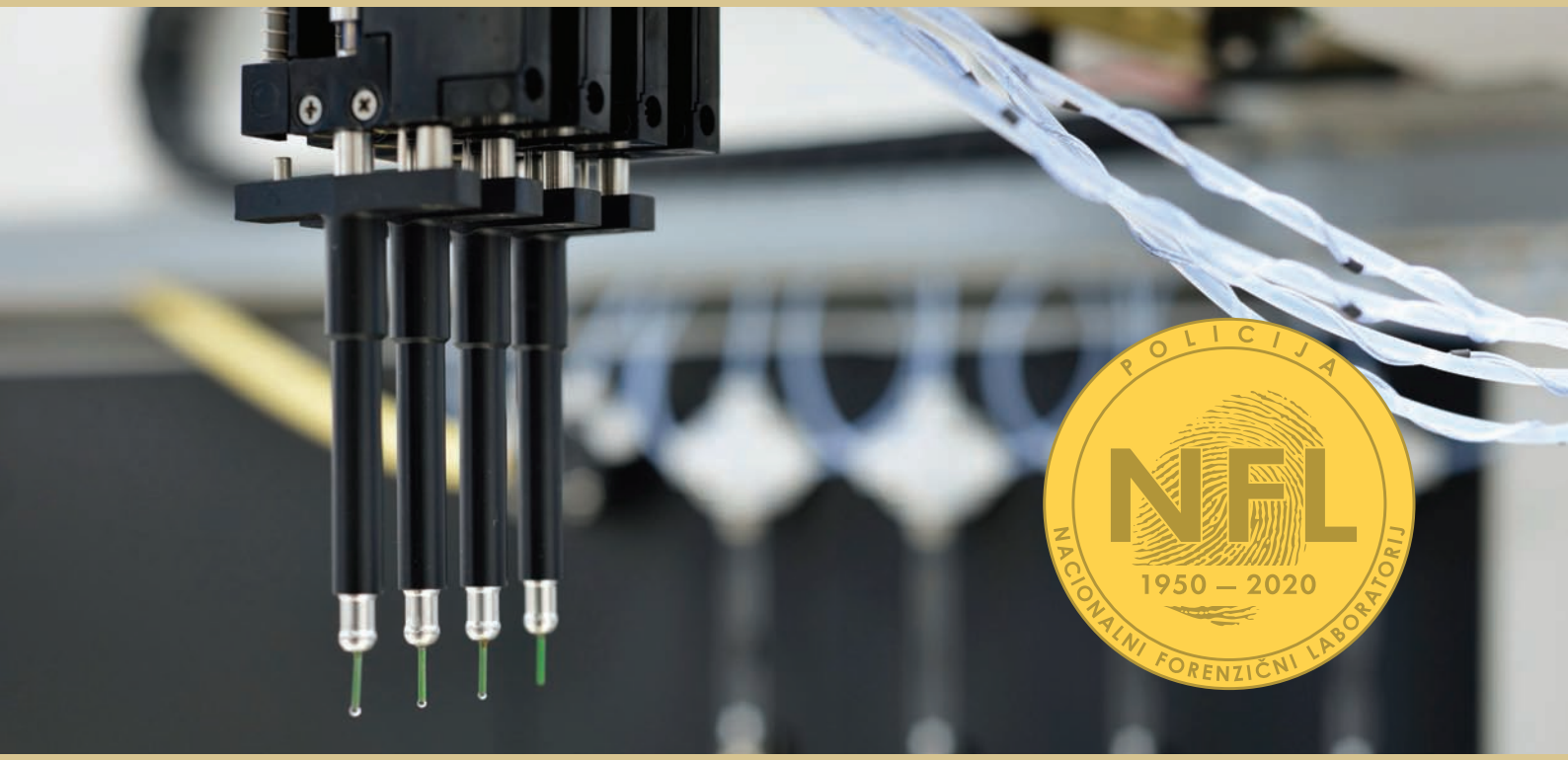
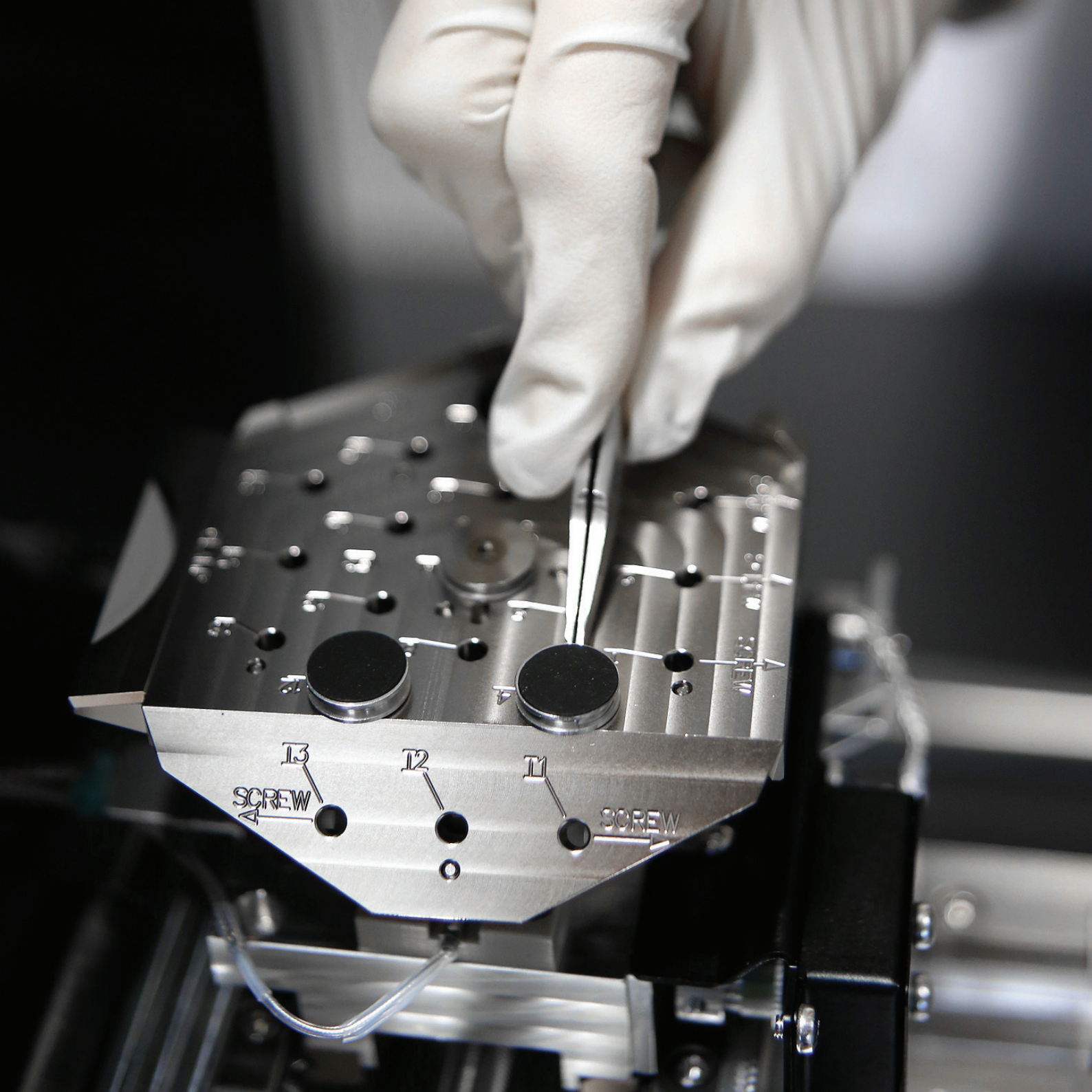
70 LET FORENZIKE V SLOVENIJI

OD KRIMINALISTIČNOTEHNIČNEGA LABORATORIJA DO NACIONALNEGA FORENZIČNEGA LABORATORIJA



70 YEARS OF FORENSICS IN SLOVENIA

FROM CRIME-TECHNICAL LABORATORY TO NATIONAL FORENSIC LABORATORY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UVOD

Nacionalni forenzični laboratorij (NFL) je specializirana notranja organizacijska enota generalne policijske uprave. Glavna naloga NFL je podajanje poročil o preiskavah in izvedenskih mnenj s področja forenzičnih znanosti. Laboratorij razvija in vpeljuje nove metode na področju forenzičnih preiskav, izvaja usposabljanja kriminalistov in policistov ter vodi in upravlja nacionalne biometrične evidence.

Poslanstvo NFL je podpora policiji, tožilstvu in sodišču s kakovostnimi, nepristranskimi in zanesljivimi forenzičnimi preiskavami. Vizija NFL je biti vrhunski in mednarodno cenjen forenzični laboratorij s poudarkom na stalnem razvoju in sodelovanju v znanstvenih preiskavah. Etični kodeks delovanja forenzičnega strokovnjaka v NFL določa temeljne vrednote laboratorija – poštenost, strokovnost, zanesljivost, razvoj in sodelovanje.

NFL v petih oddelkih obvladuje in opravlja skoraj 100 različnih vrst preiskav, ki jih opravlja v skladu s strokovnimi vodili, mnogo med njimi pa je akreditiranih po mednarodnem standardu. Ta knjižica je namenjena pregledu razvoja forenzične znanosti v sedemdesetih letih dela NFL, vse od njegove ustanovitve leta 1950 do danes.

Gorazd Pezdir
direktor Nacionalnega forenzičnega laboratorija

INTRODUCTION

The National Forensic Laboratory (NFL) is a specialised internal organisational unit of the General Police Directorate. The main task of the NFL is providing reports on examinations and expert opinions in the field of forensic science. The laboratory develops and introduces new methods in the field of forensic examinations, trains criminal investigators and police officers and keeps and manages national biometric records.

The NFL's mission is to support the police, prosecutor's office and court through high-quality, impartial and reliable forensic examinations. Its vision is to be a world-class internationally recognised forensic laboratory, with a focus on continuous development and cooperation in scientific examinations. The code of ethics of forensic experts in the NFL sets out the laboratory's main values – integrity, professionalism, reliability, development and cooperation.

In five departments, the NFL carries out almost 100 different kinds of examinations, which it undertakes in accordance with expert guidelines. Many of them are accredited in accordance with international standards. This brochure provides an overview of the development of forensic science through the seventy years of NFL's work, from its foundation in 1950 to the present.

Gorazd Pezdir
director of the National Forensic Laboratory

Forenzika je preiskovanje in razlaga kazenskopravno relevantnih dogodkov, še posebno dogodkov v povezavi z identiteto in izvorom:

- posameznikov,
- materiala (barva, plastika in drugo),
- substanc (prepovedane droge, strupi in drugo) in
- predmetov (oblačila, obuvala, orodja in drugo).

Pri delu se uporabljajo znanstvene tehnike in metode, ki omogočajo opisati, pojasniti in rekonstruirati dogodke. Z analizo materialnih sledi je mogoče razumeti potek dogodka in preiskovalcem priskrbeti materialne dokaze, ki potrdijo ali ovržejo posamezno različico dogodka.

Forenzične preiskave in kriminalističnotehnična opravila se v policijskih preiskavah kaznivih dejanj uporabljajo že skoraj 150 let. Na podlagi Locardovega načela, da vsak stik povzroči sled, so se začele preiskave krajev kaznivih dejanj in med prve, pomembne aktivnosti spadata dokumentiranje kraja dejanja in fotografiranje osumljencev. Prvi znani kriminalistični laboratorij za identifikacijo je leta 1874 v Parizu ustanovil Alphonse Bertillon in pri tem uvedel antropometrično metodo identifikacije. Leta 1909 je bil ustanovljen znameniti Inštitut za znanstveno policijo v švicarski Lozani. Njegov direktor je bil nekaj časa dr. Rudolph Reiss, ki je močno vplival tudi na razvoj forenzike v jugovzhodni Evropi in ki je podoben inštitut želel ustanoviti v Beogradu, a mu to ni uspelo. Edmond Locard je leta 1910 ustanovil policijski laboratorij v Lyonu, najbližje Ljubljani pa je leta 1912 Hans Gross na Univerzi v Gradcu zasnoval kriminalistični inštitut, ki je v prvih letih svojega delovanja opravljal tudi nekatere forenzične preiskave. Na Dunaju so tak inštitut dobili šele leta 1923, v Združe-

Forensic science is the investigation and interpretation of criminally relevant events, especially in connection with the identity and origin of:

- individuals,
- materials (colours, plastic, etc.),
- substances (illicit drugs, poisons, etc.),
- items (clothes, shoes, tools, etc.).

It employs scientific techniques and methods to describe, explain and reconstruct events. The forensic analysis of material traces enables insight into the development of events and provides investigators with physical evidence to confirm or disprove a certain version of events.

Forensic analyses in the field of criminalistics have been used by the police in criminal investigations for almost 150 years. Based on Locard's principle, which states that every contact leaves a trace, crime scene investigation was born. And one of the first and most important steps in an investigation is to process the crime scene and photograph the suspects. The first known forensic laboratory for identification was established in Paris in 1874 by Alphonse Bertillon, who applied the technique of anthropometry to identification. In 1909, the famous Institute of Police Science was founded in the Swiss city of Lausanne. For some time, the director of the institute was Rudolph Reiss, who also heavily influenced the development of forensic science in Southeast Europe and wanted to establish a similar institute in Belgrade, but was unsuccessful in his attempts. Edmond Locard founded a police laboratory in Lyon in 1910; nevertheless, the closest institute to Ljubljana was founded in 1912 when Hans Gross established the Institute of Criminology at the University of Graz, where some

nih državah Amerike je bil prvi laboratorij ustanovljen v Los Angelesu leta 1923, FBI pa je svoj laboratorij dobil leta 1932. In čeprav so v Nemčiji že po prvi svetovni vojni imeli kriminalistične laboratorije, je bil Kriminalističnotehnični inštitut Zvezne kriminalistične policije v Wiesbadnu ustanovljen šele leta 1951.

forensic investigations were carried out during the first years. The Vienna Institute of Criminology was only founded in 1923; in the same year, the first US forensic laboratory was established in Los Angeles, while the FBI opened its first forensic laboratory in 1932. Although Germany had forensic laboratories in place as early as after World War I, it was not until 1951 that the Federal Criminal Police established the Forensic Science Institute in Wiesbaden.

FORENZIKA V SLOVENIJI – 70 LET SPOMINOV

V Sloveniji kriminalistična tehnika in forenzika v obdobju med obema vojnama pravzaprav nista obstajali. Takoj po vojni so nekatera tehnična opravila in oglede krajev kaznivih dejanj opravljali le posamezniki v Ljubljani in Mariboru, leta 1950 pa je bil v Ljubljani ustanovljen Kriminalističnotehnični laboratorij Državnega sekretariata za notranje zadeve. Pred uradno ustanovitvijo laboratorija sta kriminalističnotehnična opravila opravljali preiskovalnotehnični službi v Ljubljani in Mariboru, ki sta začeli delovati takoj po koncu druge svetovne vojne, toda varnostni položaj je tedaj pokazal potrebo po ustanovitvi pravega kriminalističnotehničnega laboratorija.

Laboratorij je imel najprej prostore na Beethovnovi ulici 7 v Ljubljani, v vogalni stavbi med Cankarjevo in Beethovnovo ulico. Pozneje se je preselil v stavbo notranjega ministrstva na Štefanovi ulici 2.

Že v prvem (celem) letu delovanja so njegovi uslužbenci izdelali 167 ekspertiz, od tega 83 s področja dokumentov oziroma »grafoloških« analiz, 23 je bilo daktiloskopskih ekspertiz, 22 identifikacij strelnega orožja, devet kemijskih analiz, pet analiz sledi obuval in drugo. Pripravljati so začeli tudi prve zbirke, in sicer orožja in pisav pisalnih strojev, ter kartoteko avtomobilskih pnevmatik.

Že leta 1952 je laboratorij začel uvajati nove metode, in sicer zlasti s področja balistike (identifikacija orožja) ter preiskav tekstilnih vlaken in rastlinskih delov, zanimivo pa je, da so opravili tudi identifikacijo na

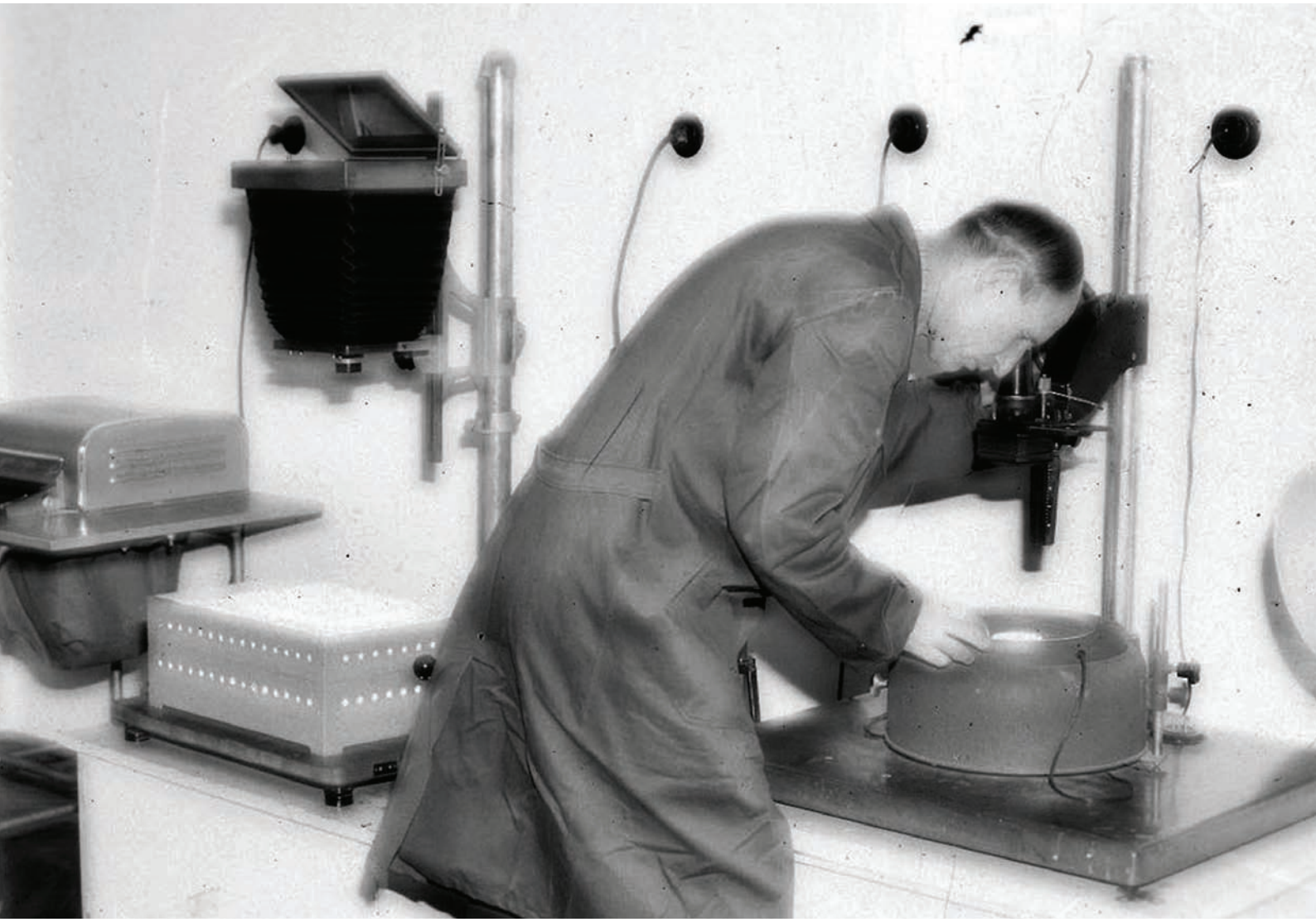
FORENSIC SCIENCE IN SLOVENIA – 70 YEARS OF MEMORIES

During the interwar period, forensic science essentially did not exist in Slovenia. Immediately after the war, some technical tasks and inspections of crime scenes were carried out by individuals in Ljubljana and Maribor. In 1951, the Forensic Science Laboratory of the State Secretariat of Home Affairs was established in Ljubljana. Before the laboratory was officially established, forensic tasks had been performed by the technical investigative services in Ljubljana and Maribor, which started operating soon after World War II, but the security situation exposed the need to create a real forensic science laboratory.

The forensic science laboratory commenced operations at 7 Beethoven Street in Ljubljana, in a corner building between Cankar and Beethoven Streets. At a later date, the laboratory was moved to the premises of the Ministry of the Interior at 2 Štefan Street.

In its first (full) year, it produced 167 expert opinions: 83 document or handwriting analyses, 23 fingerprint examinations, 22 firearm identifications, 9 chemical analyses, 5 footwear trace analyses, etc. The first collections of firearms, typewriter fonts, and tyres were also created.

The laboratory began implementing new methods as early as 1951, especially in the fields of ballistics (firearm identification) and textile fibre and plant analysis. It is also worth mentioning that an identification based on expert examination of the papillary lines of a leg was made. The first biological analyses



podlagi papilarnih črt na nogi. Tega leta so bile opravljene tudi prve biološke preiskave – tedaj še v okviru kemijskega laboratorija, saj je bil biološki laboratorij ustanovljen šele 20 let pozneje.

Številke kažejo zanimiv razvoj potreb tedanje milice po kriminalističnotehničnih oziroma forenzičnih preiskavah. Od 219 zadev, ki jih je laboratorij obravnaval leta 1953, jih je bilo več kot polovica »grafoloških« (121), k čemur je treba prišteti še 25 drugih preiskav dokumentov. Kemičnih analiz je bilo le šest in bioloških le pet, prvič pa se v statistiki pojavijo preiskave orodja (pet).

Že tedaj je bilo jasno, da je za uspešno delo kriminalističnotehničnega laboratorija potrebno znanje in tedanji vodja laboratorija Vlado Vidic se je v šolskem letu 1953/1954 usposabljal na najstarejšem in še danes izjemno uglednem Inštitutu za kriminalistično tehniko v švicarski Lozani (v sedemdesetih letih se je na tem inštitutu usposabljal tudi dolgoletni vodja in danes starosta slovenske forenzike Janez Golja).

Tudi leta 1955 so v delu kriminalističnotehničnega laboratorija prevladovale preiskave dokumentov – skoraj dve tretjini je bilo ekspertiz (226), opravili so 19 identifikacij strelnega orožja, 45 daktiloskopskih ekspertiz in 81 kemijskih preiskav. V istem letu so v okviru kriminalističnotehničnih obdelav fotografirali skoraj 7.000 in daktiloskopirali več kot 7.500 oseb.

Istega leta je tedanji državni sekretar za notranje zadeve izdal odločbo, s katero je opredelil naloge in delokrog kriminalističnotehničnega laboratorija, vodja laboratorija pa je bil za svoje delo odgovoren neposredno državnemu sekretarju za notranje zadeve Ljudske republike Slovenije. Naloge laboratorija

were also carried out that year, but they were performed in a chemical laboratory as the biological laboratory was only founded 20 years later.

The figures show the interesting development of the then-Militia's need for forensic science analyses. The laboratory worked on 219 cases in 1953, of which more than half were handwriting analyses (121) while a further 25 were document analyses. In addition, 6 chemical and 5 biological analyses were performed, while analyses of tools (5) were carried out for the first time.

It was clear then that knowledge would be essential in ensuring the proper operation of the forensic science laboratory and the head of the laboratory at the time, Vlado Vidic, attended the oldest and world-renowned Institute of Police Science in Lausanne in 1953/54 (in the 1970s, Janez Golja, the long-standing head of the laboratory and an icon of Slovenian forensic science, also attended this institute).

The year 1955 was also a year of document analyses in the forensic laboratory as such accounted for almost two thirds of all expert opinions (226); in addition, 19 firearm identifications, 45 fingerprint examinations and 81 chemical analyses were completed. In the same year, 7000 photographs of persons were taken and more than 7500 fingerprint examinations were carried out as a part of the forensic science laboratory's activities.

Also in 1955, the State Secretary of the Interior at the time issued a decision that regulated the tasks and workflow of the forensic science laboratory, while the head of laboratory was responsible directly to the State Secretary of the Interior of the People's Re-

(329)

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Na podlagi 84. in 88.člena Ustavnega zakona o temeljih družbene in politične ureditve in o organih oblasti Ljudske republike Slovenije

o d l o č a m :

I. Pri Državnem sekretariatu za notranje zadeve LR Slovenije obstojita kriminalistično-tehnični laboratorij in kriminalistični muzej.

Kriminalistično-tehnični laboratorij ima delokrog, ki se razteza na vse območje LR Slovenije. Kriminalistično-tehnični laboratorij vodi šef, ki je odgovoren za svoje delo neposredno državnemu sekretarju za notranje zadeve LR Slovenije.

Kriminalistični muzej je v sestavu kriminalistične službe Državnega sekretariata za notranje zadeve LR Slovenije.

II. Kriminalistično-tehnični laboratorij ima zlasti tele naloge:

1/ Izdeluje na zaprosilo organov za notranje zadeve in organov pravosodja vse vrste ekspertiz, kakor težje daktiloskopske, kemične /kvalitativne in kvantitativne/, fizikalne, grafološke ekspertize, ekspertize o identifikaciji strojnih pisav, identificira sledove orodja in orožja in pod.;

2/ Sodeluje po nalogu državnega sekretarja za notranje zadeve oziroma na prošnje tajništev za notranje zadeve s svojimi strokovnimi uslužbenci pri ogledih krajev težkih kaznivih dejanj;

3/ vodi centralno, za področje vse republike naslednje kartoteke oziroma razvide:

- splošno daktiloskopsko in monodaktiloskopsko kartoteko,
- kartoteko odtisov dlani,
- kartoteko neidentificiranih sledov prstnih odtisov s krajev kaznivih dejanj,
- MOS kartoteko;

4/ opravlja vse naloge za kriminalistično-tehnično centralo Državnega sekretariata za notranje zadeve FLRJ /služba identifikacije, dostavljanje splošne in monodaktiloskopske kartoteke,

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statistika o delu in uspehih kriminalistično tehnične službe, sestavljanje ustreznih poročil/;

5/ skrbi, da se delo kriminalistično-tehničnega laboratorija stalno izpopolnjuje s pridobitvami najnovejših izsledkov kriminalistično-tehnične službe v svetu in v ta namen proučuje ustrezno strokovno literaturo;

6/ skrbi za strokovni dvig kriminalistično-tehničnih in drugih uslužbencev za notranje zadeve s tem da:

- nudi kriminalističnim tehnikom strokovno prakso v svojih laboratorijih oziroma oddelkih,
- vzgaja novince v kriminalistično-tehnični službi na posebnih strokovnih tečajih, ki jih v ta namen organizira,
- pripravlja predavanja in praktične vaje za pouk v šoli Državnega sekretariata za notranje zadeve LRS ter pomaga pri urejevanju ustreznih kabinetov,
- sodeluje s strokovnimi članki v resornih časopisih;

7/ sodeluje z analitično grupo Državnega sekretariata za notranje zadeve pri sestavi raznih strokovnih analiz ter nudi tehnično pomoč ostalim službam notranjega resora;

8/ sodeluje z Inštitutom za sodno medicino in Kriminološkim inštitutom Univerze v Ljubljani in nudi slednjemu pomoč s strokovnimi predavanji s področja kriminalistične tehnike ter z izdelovanjem in dostavljanjem dvojnikov značilnejših ekspertiz;

9/ sodeluje z drugimi znanstvenimi laboratoriji in inštituti ter išče pri njih potrebno strokovno pomoč;

10/ proučuje nove metode in išče sredstva, kako z modernimi tehničnimi pripomočki identificirati storilce kaznivih dejanj in jim dokazati krivdo;

11/ skrbi za organizacijo kriminalistično-tehnične službe v LR Sloveniji in za enotno delo kriminalistično-tehničnih centrov; daje za njihovo delo organizacijska in strokovna navodila ter nadzoruje njihovo delo.

III. Kriminalistični muzej zbira predmete, ki izvirajo kot corpora delicti iz kaznivih dejanj, spisovni in izvedenski material, ki se nanaša na primere iz kriminalistične prakse, urejuje ta material ter ga hrani. Muzej je urejen tako, da nudi praksi in teoriji potrebno dokumentacijo.

IV. Kriminalistično-tehnični laboratorij ima naslednje delovne enote s potrebnimi strokovnimi uslužbenci:

- fizikalni laboratorij /2 uslužbenca/,
- kemični laboratorij /3 uslužbenci/,

so bile priprava ekspertiz, sodelovanje na ogledih in vodenje daktiloskopskih kartotek (zbirk oziroma evidenc). Laboratorij je skrbel tudi za spremljanje najnovejših znanstvenih spoznanj in usposabljanje kriminalističnih tehnikov in drugih uslužbencev Državnega sekretariata za notranje zadeve Ljudske republike Slovenije. Zanimivo je, da je bila ena izmed obveznosti tudi objavljanje strokovnih člankov. Laboratorij je med drugim skrbel tudi za organizacijo kriminalističnotehnične dejavnosti v Ljudski republiki Sloveniji in njeno strokovno vodenje.

Leta 1956 je bilo na področju operativne kriminalistične tehnike zaposlenih 16 oseb: v kemičnem laboratoriju štiri osebe, v fizikalnem laboratoriju in risalnici po dve osebi, v grafologiji in fotografiji dve osebi, v daktiloskopiji pet oseb in v administraciji ena.

Število zaposlenih se je skozi čas spreminjalo, število opravljenih preiskav pa se je iz leta v leto povečevalo. Tako je bilo leta 1961 v laboratoriju sistemiziranih 17, zasedenih pa 14 delovnih mest, zanimivo pa je, da sta bila v okviru takratnega Oddelka za kriminalistično tehniko dva kemijska laboratorija, fizikalni laboratorij ter odseki za grafologijo, daktiloskopijo in fotografijo. V naslednjih letih se je število zaposlenih zmanjševalo, saj je bilo leta 1967 v laboratoriju le še devet strokovnjakov, ti pa so skupaj naredili 735 ekspertiz.

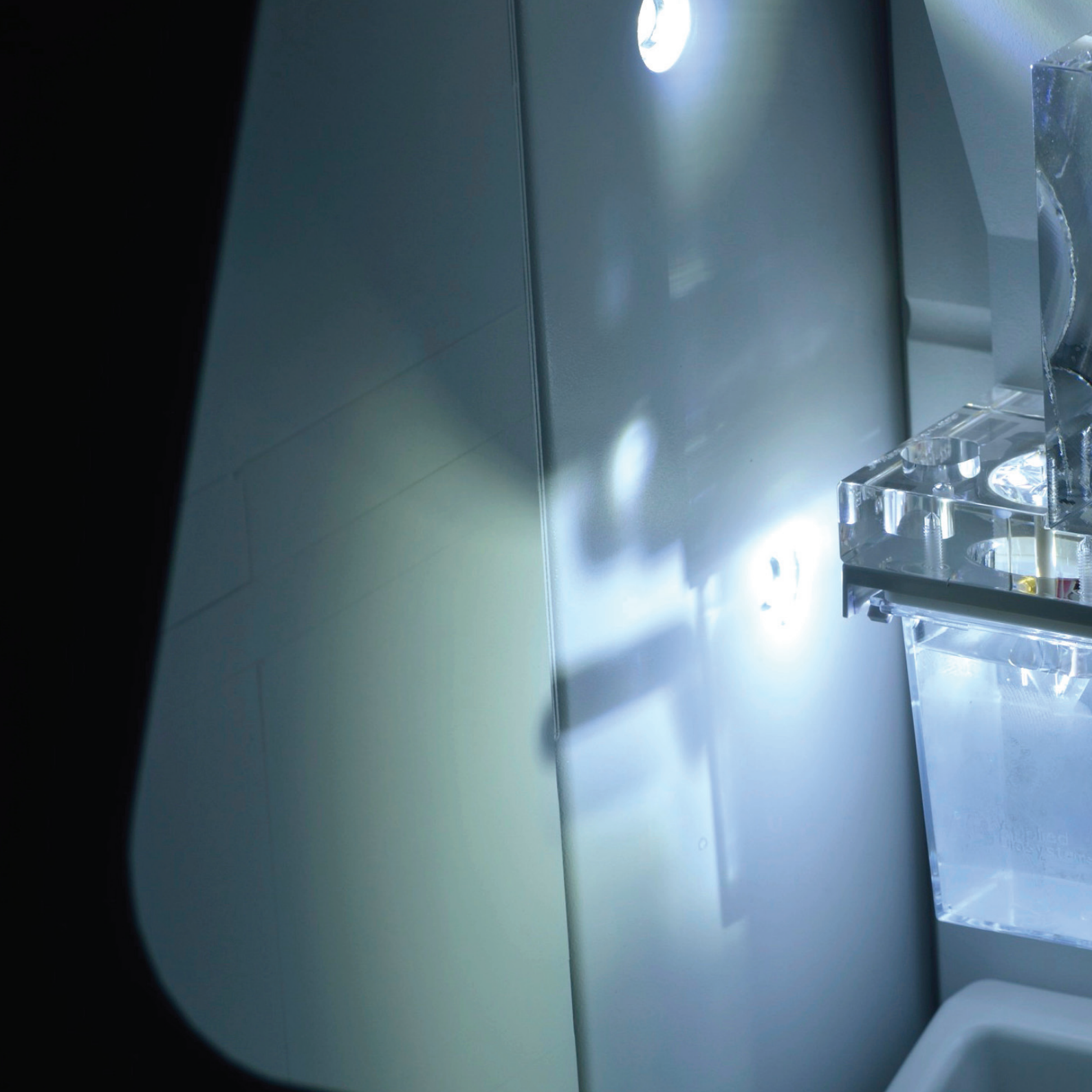
Leta 1970 se je število zaposlenih povečalo na 13, eden je imel tudi univerzitetno izobrazbo, oprema, ki so jo tedaj uporabljali, pa je bila skromna: primerjalni mikroskop in nekaj drugih mikroskopov, UV-VIS spektrometer, infrardeči spektrofotometer in leta 1971 nabavljen spektrograf z laserskim mikrospektralnim analizatorjem.

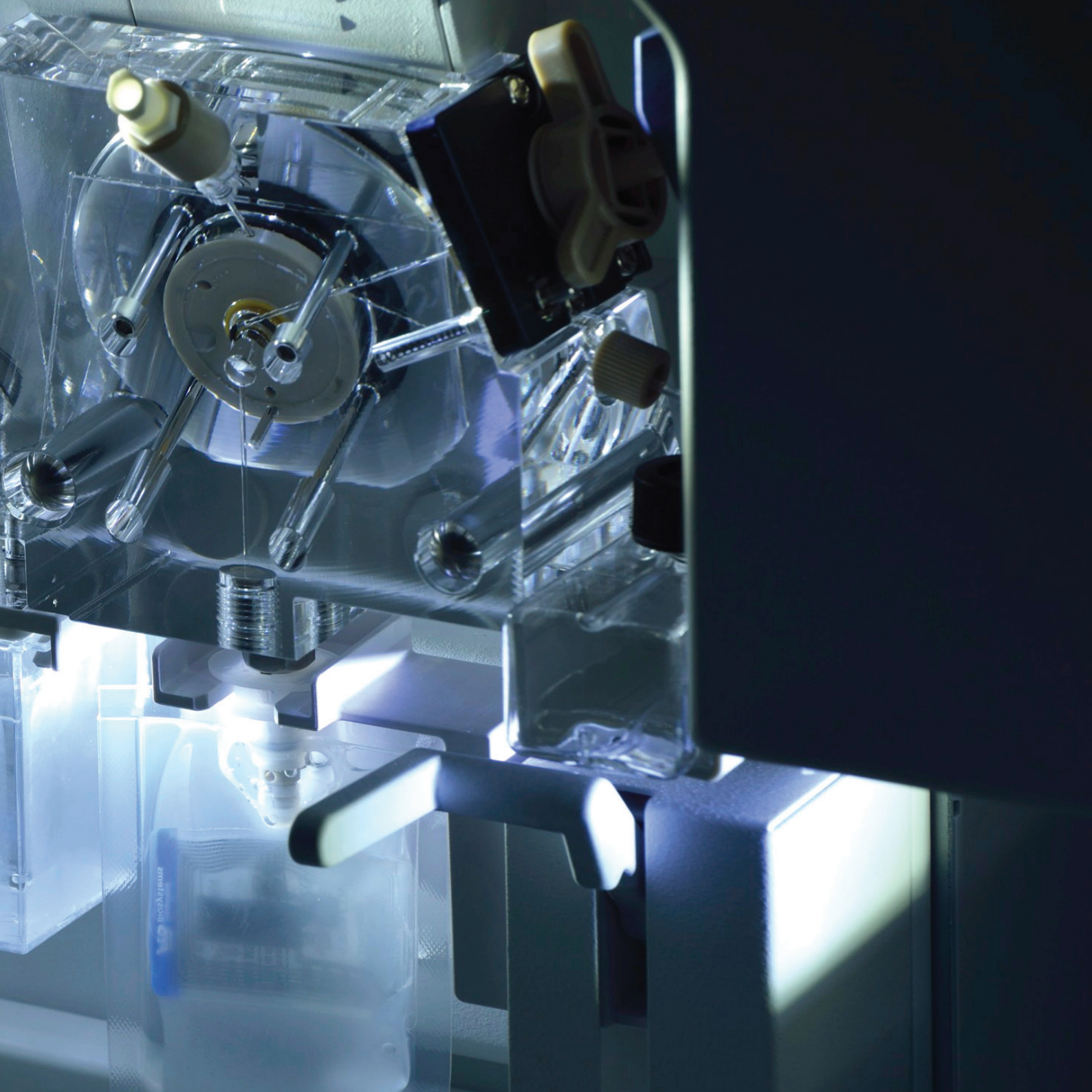
public of Slovenia (hereinafter: PR of Slovenia). The laboratory's tasks were to deliver expert opinions, take part in crime scene inspections and keep records (collections and records). The laboratory was also tasked with monitoring the newest scientific developments and training forensic scientists and other employees of the State Secretariat of the Interior of the PR of Slovenia. Interestingly, one of its duties was also to publish academic articles. Likewise, it was in charge of organising forensic science activities in the PR of Slovenia, which it also organisationally and professionally managed.

In 1956, the Central Operational Forensic Science Bureau had 16 employees: four employees in the chemical laboratory, two employees in both the physics laboratory and sketch room, two employees in the graphology and photography department, five in the dactyloscopy department, and one in administration.

Over time, the number of employees varied, while the number of completed investigations rose each year. In 1961, there were 17 posts classified in the laboratory, while 14 were occupied. The Department of Forensic Science consisted of two chemical laboratories, a physics laboratory and offices for graphology, dactyloscopy and photography. In the following years, the number of employees decreased as there were only nine persons employed in the laboratory in 1967, who completed 735 expert opinions in total.

In 1970, the number of employees rose to 13, one of whom also had a university degree, and the equipment used was very modest: a comparison microscope and some other microscopes, a UV-VIS spec-






SKICA

Leta 1971, skoraj 20 let po prvih opravljenih preiskavah, je bil ustanovljen biološki laboratorij z eno samo zaposleno strokovnjakinjo.

Leta 1973 je bil Kriminalističnotehnični laboratorij vključen v kriminalistično službo in je tako za kar 30 let izgubil svoj položaj in samostojnost znotraj ministrstva.

Ob koncu sedemdesetih let se je laboratorij kadrovsko okrepil in postajal čedalje primerljivejši s podobnimi institucijami po svetu. Leta 1981 se je preselil v novo, namensko zgrajeno stavbo na Vodovodni cesti v Ljubljani. Tam je nato deloval skoraj 35 let, iz tega poslopja pa je pozneje nastala sodobna laboratorijska zgradba.

Leta 1991 se je laboratorij preimenoval – iz Oddelka za kriminalistično tehniko s šestimi sektorji (sektorjem za biološke preiskave, kriminalistično fotografijo, daktiloskopijo, grafološke preiskave, kemijske preiskave in fizikalne preiskave) v Center za kriminalističnotehnične preiskave.

Osamosvojitev Slovenije leta 1991 je pomenila poseben izziv za zaposlene v laboratoriju. Uvedli so stalno dežurstvo na delovnem mestu, da so bili na voljo za oglede dogodkov, zlasti streljanj. Dogodke so dokumentirali v skladu s kriminalističnotehničnimi standardi in izvajali identifikacijo zajetih poklicnih vojakov Jugoslovanske ljudske armade.

Leta 1992 je v Evropi dozorela ideja o bolj formalnem povezovanju forenzičnih laboratorijev. Pri tem je sodelovalo 17 laboratorijev iz različnih držav in Center za kriminalističnotehnične preiskave je bil kot edini vzhodnoevropski laboratorij povabljen k sodelovanju

trophotometer, an infrared spectrometer and a spectrograph with a laser microspectral analyser.

Almost 20 years after the first investigations, the biological laboratory was established in 1971 with only one expert.

In 1973, the Forensic Science Laboratory became a part of the criminal intelligence service and therefore lost its position and independence within the Ministry.

By the late 1970s, the laboratory reinforced staffing and became more comparable to similar institutions around the world. In 1981, a new, purpose-built building was constructed on Vodovodna Street in Ljubljana, where the laboratory was situated for the next 35 years and where, later, a modern laboratory building was erected.

In 1991, the laboratory of the Department of Criminal Investigations with six divisions, namely for biological examinations, forensic photography, dactyloscopy, graphology, chemical examinations and physical examinations, was renamed the Centre for Criminal Investigations.

The independence of Slovenia in 1991 posed a special challenge for the employees of the laboratory. 24-hour standby duty was introduced to ensure that employees were available for incident investigation, especially shootings. Every event was processed in accordance with forensic science standards, while the identification of soldiers of the Yugoslav People's Army also took place.

In 1992, the idea of the formal integration of forensic laboratories in Europe matured. A total of 17

z ustanovnimi člani združenja. Tako je še danes prepoznan kot ustanovni član, ko je bila Evropska mreža inštitutov za forenzične znanosti (European Network of Forensic Science Institutes – ENFSI) leta 1995 končno tudi formalno ustanovljena.

Pomembna prelomnica so bile tudi uvedba preiskav humane DNK, zaposlitev strokovnjakov za genetiko in vzpostavitev prve evidence DNK leta 1996. Evidenco je še istega leta zakonsko uredil Zakon o policiji. Istega leta je v Centru za kriminalističnotehnične preiskave delovalo pet enot, in sicer kemični laboratorij, fizikalni laboratorij in biološki laboratorij ter referata za preiskavo dokumentov in daktiloskopijo, dejavnost kriminalistične fotografije pa je bila pridružena fizikalnemu laboratoriju.

Ustavno sodišče Republike Slovenije je leta 1998 z odločbo št. U-I-132/95 močno omajalo položaj Centra za kriminalističnotehnične preiskave. Odločilo je namreč, da se nepristranost in neodvisnost laboratorija presojata ob upoštevanju njegovega pravnega položaja, zaposleni v njem pa so uradniki Ministrstva za notranje zadeve. Ob ugotovitvi, da center na podlagi zakona sodeluje pri izvrševanju pregona kaznivih dejanj, je sodišče odločilo, da že samo to dejstvo vzbuja tolikšen dvom o njegovi nepristranosti, da bi njegova postavitev za izvedenca v kazenskem postopku pomenila kršitev ustavnega jamstva o enakem varstvu pravic. Odločitev je bila za laboratorij in policijo velika težava, saj se mnogo forenzičnih preiskav opravi že v predkazenskem postopku, nekatere med njim pa zaradi posebnosti forenzičnih preiskav niso ponovljive.

Leta 2001 je center spremenil ime in se preimenoval v Center za forenzične preiskave. To je bil nekakšen

laboratories from different countries participated. The Centre for Criminal Investigations was the only "Eastern European" laboratory invited, and is today still regarded as one of the founding members of the European Network of Forensic Science Institutes (ENFSI), which was formally founded in 1995.

An important milestone for the Centre was the introduction of human DNA profiling, hiring geneticists and establishing a DNA database in 1996. In the same year, the database was regulated by the Police Act. At that time, there were five units operating within the Centre: the chemical laboratory, the physics laboratory, the biological laboratory, and units for documentary analysis and fingerprint examinations, while forensic photography was a part of the physics laboratory.

In 1998, the Constitutional Court of the Republic of Slovenia severely destabilised the position of the Centre for Criminal Investigations by way of Decision U-I-132/95. The court held that the impartiality and independence of the laboratory were to be assessed by taking into consideration its legal status and that its employees are officers of the Ministry of the Interior. Establishing that, in accordance with the law, the Centre was engaged in the prosecution of criminal offences, the Constitutional Court held that this fact alone cast doubt on its impartiality to such a degree that its appointment as an expert in criminal proceedings would constitute a violation of the constitutional guarantee of the equal protection of rights. This decision presented the laboratory and the police with a considerable problem as many forensic analyses were carried out during the pre-trial criminal procedure, while some, owing to the specific nature of forensic tests, could not be repeated.


Control
Fingerprints
Palmprints
Descriptors
Mugshots
Custom
Signatures
Id: 021310201402
Swap
Display Flats
Display Minutiae
Classification: W
Reference: -
Print Quality: A
Minutiae Count: 129
Roll to Slap: Success
Classification: /
Reference: W
Print Quality: A
Minutiae Count: 155
Roll to Slap: Success
Classification: W
Reference: -
Print Quality: A
Minutiae Count: 140
Roll to Slap: Success
Classification: W
Reference: -
Print Quality: B
Minutiae Count: 113
Roll to Slap: Success
Classification: W
Reference: -
Print Quality: B
Minutiae Count: 103
Roll to Slap: Success
Classification: /
Reference: -
Print Quality: B
Minutiae Count: 138
Roll to Slap: Success
Classification: /
Reference: -
Print Quality: A
Minutiae Count: 134
Roll to Slap: Success
Classification: /
Reference: -
Print Quality: A
Minutiae Count: 117
Roll to Slap: Match not found
Classification: W
Reference: /
Print Quality: B
Minutiae Count: 138
Roll to Slap: Success
Classification: /
Reference: -
Print Quality: B
Minutiae Count: 98
Roll to Slap: Success
Cancel
Center
Reject
Quality Control Case
Save and Exit
Save and Next

kulturni preskok. Po svetu, z izjemo nemško govorečih dežel in nekaj skandinavskih laboratorijev, se namreč izraz kriminalistična tehnika za znanstveno preiskovanje sledi s krajev kaznivih dejanj ne uporablja, ker ne deluje znanstveno.

Istega leta je Center za forenzične preiskave pridobil sistem AFIS (Automated Fingerprint Identification System) danes že davno neobstoječega proizvajalca MorphoTrak, ki je bil leta 2012 s sofinanciranjem Evropske unije prenovljen. Skoraj 20 let star sistem bo predvidoma zamenjan do leta 2021.

Leta 2002 je Policija oziroma zanjo Center za forenzične preiskave v treh mesecih od Banke Slovenije prevzel preiskave ponarejenega denarja. V skladu z evropsko zakonodajo sta bila v Centru za forenzične preiskave leta 2004 ustanovljena Nacionalni analitski center za bankovce (National Analysis Centre – NAC) in Nacionalni analitski center za kovance (Coin National Analysis Centre – CNAC), ki sta danes osrednji točki za preiskave ponarejenih bankovcev in kovancev in edina, ki lahko opravljata preiskave bankovcev in kovancev valute evro.

Na podlagi težav, ki jih je prinesla odločba Ustavnega sodišča Republike Slovenije iz leta 1998, je Vlada Republike Slovenije leta 2003 sprejela *Uredbo o spremembah in dopolnitvah Uredbe o notranji organizaciji, sistemizaciji, delovnih mestih in nazivih v organih javne uprave in v pravosodnih organih (Uradni list, št. 109/2003)*, s katero sta bili ponovno tudi formalno zagotovljeni samostojnost in strokovna neodvisnost Centra za forenzične preiskave:

> »Ne glede na določbe tega člena se za izvajanje kriminalističnotehničnih in laboratorijskih raz-

In 2001, the Centre was once again renamed to the Centre for Forensic Science. It also signified a cultural leap since, apart from some German-speaking countries and some Scandinavian laboratories, the term "criminalistic methods" was no longer used to denote the scientific analysis of evidence from crime scenes because it lacked a scientific perspective.

In 2002, the Centre for Criminal Investigations started using the AFIS (Automated Fingerprint Identification System) made by the manufacturer MorphoTrak, which went out of business many years ago. In 2012, the system was updated with co-financing from the EU. The system, which has been used for almost 20 years, is due to be replaced by 2021.

In 2002, the police and the Centre for Forensic Science took over the investigation of currency counterfeiting from the Bank of Slovenia in a span of only three months. In accordance with European legislation, the National Analysis Centre (NAC) and the Coin National Analysis Centre (CNAC) were founded in 2004 within the Centre for Forensic Science. Today, they act as the central authorities for investigations of counterfeit banknotes and coins, and are the only institutions that can perform analyses of euro banknotes and coins.

Considering the difficulties brought on by the Constitutional Court's decision of 1998, the Government of the Republic of Slovenia adopted the *Decree amending the Decree on the internal organisation, job classification, posts and titles in public administration and judicial bodies (Official Gazette of the Republic of Slovenia No 109/2003)* in 2003, which formally guaranteed the autonomy and independence of the experts of the Centre for Forensic Science:

iskovanj, opravljanje preiskav ter dajanje strokovnih in izvedenskih mnenj s tega področja za potrebe policije, državnih tožilstev in sodišč na generalni policijski upravi oblikuje Center za forenzične preiskave na ravni sektorja. Vodja Centra za forenzične preiskave je neposredno odgovoren generalnemu direktorju policije. Forenzični izvedenci, imenovani za sodne izvedence v skladu s 87. členom zakona o sodiščih, ki so zaposleni v centru, in uslužbenci centra, ki opravljajo izvedeništvo po odredbi sodišča, opravljajo izvedenske naloge samostojno in neodvisno in so strokovno odgovorni izključno vodji centra.«

Leta 2006, ko je bilo v tedanjem Centru za forenzične preiskave zaposlenih 52 strokovnjakov (od tega trije doktorji in dva magistra znanosti) in tehnikov ter preostalega osebja, je laboratorij začel priprave na dve pomembni razvojni nalogi: na akreditacijo in na gradnjo nove, večje in moderni znanosti prilagojene stavbe. Zlasti nova stavba je bila izjemno zahtevna, a tudi več kot nujna naloga. V prvem desetletju novega tisočletja se je namreč del zaposlenih (z Oddelka za kemijske preiskave) moral preseliti v kontejnerje, ki so bili postavljeni kar na parkirišču stare stavbe, del preiskav humane DNK pa je bilo treba preseliti v začasne prostore na Ulici Jožeta Jame, kamor se je pozneje preselil tudi Oddelek za preiskave dokumentov NAC/CNAC.

»Notwithstanding the provisions of this Article, the Centre for Forensic Science shall be established at the sector level within the General Police Directorate to perform forensic and laboratory research, and carry out forensic investigations, and submit expert findings and opinions for the needs of the police, the State Prosecutor's Office, and courts. The Head of the Centre for Forensic Science is directly responsible to the Director General of the Police. In accordance with Article 87 of the Courts Act, forensic experts appointed as expert witnesses who are employed at the Centre and employees of the Centre who prepare expert opinions by court order shall perform their tasks as expert witnesses autonomously and independently, and are professionally responsible only to the Head of the Centre.«

In 2006, when the Centre for Forensic Science had 52 expert employees (three with PhDs and two masters of science), technicians and other staff, the laboratory began preparations for two important development tasks: accreditation and building a new, bigger building fit for the purposes of modern science. The construction of the new building was an especially difficult but at the same time crucial task. During the 2010s, some employees at the Chemical Examination Section had to move to containers installed in the car park of the old building, while some of the human DNA profiling team moved to a temporary location on Jože Jama Street, where the NAC/CNAC documentary analysis unit also subsequently moved.

Za pomoč pri strokovno zahtevnem procesu pridobivanja akreditacije laboratorija oziroma njegovih metod je tedanji vodja Centra za forenzične preiskave Janez Golja zaprosil strokovnjake Nizozemskega forenzičnega inštituta (NFI), ki so pomembno prispevali k temu, da je Center za forenzične preiskave že leta 2010 pridobil akreditacijo za nekatere metode. Istega leta je dobil tudi novo, današnje ime, tj. Nacionalni forenzični laboratorij (NFL).

Potem ko je strokovno samostojnost in neodvisnost laboratorija od leta 2003 zagotavljala *Uredba o spremembah in dopolnitvah Uredbe o notranji organizaciji, sistemizaciji, delovnih mestih in nazivih v organih javne uprave in v pravosodnih organih*, je od leta 2013 s sprejetjem Zakona o organiziranosti in delu v policiji v 19. členu strokovna samostojnost in neodvisnost laboratorija tudi zakonsko zagotovljena:

19. člen

(nacionalni forenzični laboratorij)

(1) Nacionalni forenzični laboratorij je specializirana notranja organizacijska enota generalne policijske uprave, ki zagotavlja strokovno in neodvisno podajanje poročil o preiskavi in izvedenskih izvidov in mnenj s področja forenzičnih znanosti.

(2) Nacionalni forenzični laboratorij izvaja forenzična in laboratorijska raziskovanja in opravlja forenzične preiskave ter podaja poročila o preiskavi in izvedenske izvide in mnenja za potrebe policije, državnega tožilstva, sodišč in drugih državnih organov.

The then Head of the Centre for Forensic Science, Janez Golja, requested the assistance of experts from the Netherlands Forensic Institute (NFI) during the technically complex process of acquiring laboratory and method accreditations. With their help, the Centre for Forensic Science managed to obtain accreditations for several methods by 2010. The same year, the laboratory was also renamed the National Forensic Laboratory (NFL), which is still used today.

While the autonomy of the experts of the laboratory has been regulated by the *Decree amending the Decree on the internal organisation, job classification, posts and titles in public administration and judicial bodies* since 2003, it is the *Organisation and Work of the Police Act* of 2013 that regulates the autonomy and independence of the experts of the laboratory by law.

Article 19

(National Forensic Laboratory)

(1) The National Forensic Laboratory shall be a specialised internal organisational unit of the General Police Directorate ensuring the professional and independent provision of reports on investigations, and expert findings and opinions in the area of forensic sciences.

(2) The National Forensic Laboratory shall carry out forensic and laboratory research and perform forensic investigations, and submit reports on specific investigations and expert findings and opinions for the needs of the police, the State Prosecutor's Office, the courts and other state authorities.


RENAULT
Srečno vozniki

(3) Nacionalni forenzični laboratorij opravlja naloge avtonomno in v skladu s strokovnimi standardi in vodili.

(4) Forenzični strokovnjaki, ki so zaposleni v laboratoriju, so pri opravljanju izvedeništva neodvisni.

Akreditacija laboratorija je potekala razmeroma hitro, medtem ko je bila nova stavba mnogo trši oreh, saj je njeno načrtovanje sovpadlo s finančno krizo. Kljub temu se je s podporo tedanjega generalnega direktorja policije Janka Gorška in ministrice za notranje zadeve Katarine Kresal, ki je za podporo prepričala tedanjega predsednika vlade Boruta Pahorja, leta 2012 začela dolgo in težko pričakovanja gradnja nove stavbe. Zaradi finančne krize in propadanja gradbincev jo je dokončal šele tretji izbrani ponudnik. Ker večjega dela laboratorija ni bilo mogoče preseliti na drugo lokacijo, je del zaposlenih skoraj tri leta svoje naloge opravljal tako rekoč na gradbišču, saj je nova stavba zrasla ob stari iz leta 2001. Po dograditvi nove stavbe so se ti zaposleni preselili iz stare, precej poškodovane zgradbe in kontejnerjev v novo stavbo, da so gradbinci lahko v celoti obnovili še staro stavbo. Konec leta 2014 so se v povsem nove prostore Nacionalnega forenzičnega laboratorija preselili še tisti, ki so dotlej delali v začasnih prostorih na Ulici Jožeta Jame. Tako je bilo lahko na praznik policije junija 2015 tudi uradno odprtje ene največjih pridobitev policije po osamosvojitvi, Nacionalni forenzični laboratorij pa je namesto v izjemno utesnjenih prostorih, ki so merili vsega 850 kvadratnih metrov, začel svoje naloge opravljati na 4.500 kvadratnih metrih, ki zagotavljajo ustrezno organizacijo dela, onemogočanje kontaminacij in podobno.

(3) The National Forensic Laboratory shall perform its tasks autonomously and in accordance with professional standards and guidelines.

(4) Forensic experts employed with the laboratory shall be fully independent in preparing expert findings and opinions.

While the accreditation process was relatively quick, the relocation to the new building was much more difficult as the planning coincided with the financial crisis. With the support of the then Director General of the Police, Janko Goršek, Minister of the Interior Katarina Kresal, who also managed to mobilise the support of the then Prime Minister Borut Pahor, the long-awaited construction of the new building began in 2012. Due to the financial crisis and the decline of construction companies, the new building was actually completed by the third selected provider. A large part of the laboratory could not be moved to another location, so a portion of the staff had to perform tasks, so to speak, on a construction site as the new building was constructed beside the old one from 2001. After the construction of the new building was finished, those employees moved from the old and damaged building and containers to the new building, which, in turn, enabled the construction workers to renovate the old building as well. In late 2014, the employees who had been working in temporary workspaces on Jože Jama Street moved to the brand new work location at the National Forensic Laboratory. The official opening of one of the most important additions to the police since independence took place on Police Day in June 2015 when the National Forensic Laboratory moved operations from a cramped workspace of only 850m^2 to the

Obdobje po letu 2010 in zlasti po dokončanju nove zgradbe je bilo izjemno pomembno tudi za širitev akreditacije, saj so novi, namensko zgrajeni prostori omogočali delovne razmere, ki so zadoščale visokim zahtevam in standardom, ki jim je treba zadostiti v postopkih akreditacije in pri opravljanju akreditirane dejavnosti. Ključnega pomena, tudi zaradi zahtev Evropske unije, je bila akreditacija preiskav DNK, kar je Oddelek za biološke preiskave z uspehom in v kratkem času tudi pridobil.

Leta 2015, ko se je Slovenija srečala z migrantsko krizo, je Nacionalni forenzični laboratorij za nekaj mesecev uvedel lastno varovanje s svojimi zaposlenimi in s tem omogočil, da so policisti, ki so dotlej varovali laboratorij, lahko sodelovali pri reševanju krize.

Z vstopom Slovenije v Evropsko unijo se je Nacionalnemu forenzičnemu laboratoriju omogočilo tudi financiranje strokovnih projektov. Od leta 2011 do 2016 je tako laboratorij izpeljal pet projektov v skupni vrednosti 3.566.000 evrov. Nabavljena je bila vrhunska znanstvena oprema in izpeljanih več izjemno pomembnih raziskav, ki so bile odmevne tudi v mednarodnem prostoru (projekt SeDy in zlasti projekt Response).

Projekt v obdobju 2011–2013: Okrepitev kapacitet avtomatizirane obdelave in iskanja daktiloskopskih podatkov za potrebe izvajanja Prümskega sklepa – SCAFIS PRUM.

Namen projekta: nacionalni sistem AFIS pripraviti na povečano število poizvedb drugih držav članic Evropske unije v slovenski nacionalni bazi prstnih odtisov.

new 4500m^2 facility, which will ensure suitable work organization, prevent contamination, etc.

The period after 2010, once the new building had been finished, was extremely important with regard to the acquisition of new accreditations as the new, purpose-built spaces facilitated the conditions for complying with the high requirements and standards that are needed for accreditation and to perform activities enabled by the accreditations. Due to the EU requirements, it was key that accreditations for performing DNA tests were acquired – a task which was successfully completed in a very short period by the Biological Examination Section.

For a few months in 2015 during the migrant crisis in Slovenia, the National Forensic Laboratory organised its own security with its own employees and thereby ensured that the police officers who had been providing security at the laboratory could assist in resolving the migrant crisis.

With Slovenia's accession to the EU, the National Forensic Laboratory was also afforded the opportunity to receive project financing. In the period between 2011 and 2016, the laboratory carried out five projects with a total value of EUR 3,566,000.00 State-of-the-art scientific equipment was purchased and several incredibly important studies were carried out that also drew the attention of the international public (SeDy and especially the Response project).

Project 2011–2013: Strengthening the Capacities of AFIS for the Implementation of the Prüm Decision – SCAFIS PRUM.

Projekt v obdobju 2012–2015: Izboljšanje analitičnih kapacitet za kemijske preiskave eksplozivov – IECAC.

Namen projekta: povečati zmogljivosti Nacionalnega forenzičnega laboratorija za identifikacijo in analizo eksploziv in eksplozivnih naprav, identifikacijo sledi eksplozivov in razbitin, analizo neeksplodiranih razstreliv in naprav ter identifikacijo in analizo strupenih industrijskih kemikalij in kemičnih bojnih strupov.

Projekt v obdobju 2012–2015: Izboljšanje kapacitet za DNK-analize za izmenjavo Prüm podatkov – IC DNA.

Namen projekta: povečati zmogljivosti Nacionalnega forenzičnega laboratorija za izvedbo zelo kakovostnih standardnih analiz, uvesti nove analitske metode in prispevati k hitrejši izmenjavi DNK-podatkov z drugimi državami članicami in državami v regiji pri preiskavah kaznivih dejanj čezmejne razsežnosti.

Projekt v obdobju 2015–2016: Varnostna barvila (SEcurity DYes) – SEDY – HOME/2013/ISEC/AG/4000005982.

Namen projekta: razširitev znanja in vedenja o kemijski sestavi varnostnih barvil, ki se pogosto uporabljajo v inteligentnih sistemih za nevtralizacijo bankovcev (IBNS); uporabljajo jih profesionalni uporabniki gotovine.

Rezultati projekta so bili predstavljeni na konferenci Evropske mreže inštitutov za forenzične znanosti.

Projekt v obdobju 2015–2016: Odziv na izzive v forenzični analizi drog – RESPONSE.

Project aim: The project's main objective was to prepare the national AFIS system to meet the needs of the increased number of inquiries in the Slovenian national fingerprint database made by other EU Member States.

Project 2012–2015: Improving analytical capacities for the chemical analysis of explosives – IECAC

Project aim: Increasing the capacities of the National Forensic Laboratory (NFL) for the identification and analysis of explosives and explosive devices, the identification of explosive traces and debris, the analysis of unexploded explosives and devices, the identification and analysis of toxic industrial chemicals (TICs) and chemical warfare agents (CWAs).

Project 2012–2015: Increasing DNA analysis capacities for Prüm data exchange – IC DNA

Project aim: Increase the capacities of the National Forensic Laboratory to conduct high-quality analyses, introduce new analytic methods, and contribute to faster DNA data exchange with other Member States and countries of the region in crime investigations with an international dimension.

2015 – 2016 SEcurity DYes – SEDY – HOME/2013/ISEC/AG/4000005982

Project aim: Broadening knowledge and understanding of the composition of frequently used security dyes in intelligent banknote neutralisation systems (IBNS) employed by professional cash handlers.

The conclusions of the project were presented at the ENFSI conference.


1A-0028
1A-0038
1A-0046
1A-0069
1A-0078
1A-0079
1A-0080
1A-0087
1A-0095
1A-0102
1A-0103


1B-0192
1B-0200
1B-0202
1B-0208
1B-0213

Namen projekta: projekt RESPONSE se je nanašal na dve posebni temi forenzičnih preiskav s področja drog:

- na identifikacijo novih spojin (NPS), ki v evropskem in svetovnem merilu prej še niso bile znane. Glavna ovira za identifikacijo takih spojin je pomanjkanje razpoložljivih referenčnih materialov in spektralnih podatkovnih baz;
- na profiliranje drog, pri katerem je glavna težava neskladje med pričakovanji in potrebami odjemalcev (organi odkrivanja, pregona, sodni sistem, oblikovalci EU-politik) ter zmogljivostmi, razpoložljivimi metodologijami in kompetencami zaposlenih v forenzičnih laboratorijih.

Na področju NPS je bila razvita metodologija kemijskih karakterizacij in identifikacij novih substanc. Za izmenjavo in širjenje kemijskih informacij v realnem času smo uvedli različne komunikacijske kanale. Forenzični in carinski laboratoriji so odlično sprejeli prosto dostopno bazo NPS and related compounds, ki je objavljena na spletnih straneh policije.

Projekt je imel široko mednarodno podporo, saj so bili v izvedbo poleg koordinatorja (Oddelek za kemijske preiskave NFL) vključeni še partnerji Fakultete za kemijo in kemijsko tehnologijo, Ljubljana, ter forenzični laboratoriji iz Belgije, Francije, Danske (dva), Madžarske in Hrvaške. Kot pridruženi partnerji iz tujine so sodelovali laboratoriji iz Irske, Norveške, Cipra in Portugalske, evropska agencija EMCDDA kot strateški svetovalec in domače institucije: Inštitut za sodno medicino, Nacionalni inštitut za javno zdravje in društvo DrogArt.

2015 – 2016 A Response to Challenges in Forensic Drug Analyses – RESPONSE

Project aim: The RESPONSE project addressed two specific topics of forensic drug investigations:

- New psychoactive substance (NPS) identification carried out on substances previously unknown on a European and global scale where a lack of available certified reference materials and specific reliable spectra databases are the main problem for accurate identification.
- Drug profiling where the main problem is the recognised gap between the expectations and needs of customers (law enforcement authorities, judicial system, EU policy makers) and the capacities, methodologies and staff competencies of forensic laboratories.

In the field of NPS, a methodology for the chemical characterisation and identification of new substances was developed. For the real-time exchange and sharing of chemical information, we established various communication channels. The freely accessible database "NPS and related compounds", which is available on the website of the police, was well received by forensic and customs laboratories.

The project received wide international support as it included the project coordinator (Chemical Examination Section of the NFL) and partners from the Faculty of Chemistry and Chemical Technology in Ljubljana, and forensic laboratories from Belgium, France, Denmark (2×), Hungary and Croatia. It also included, as associated foreign partners, laboratories from Ireland, Norway, Cyprus, Portugal, and the

Razvite so bile metodologije profiliranja kokaina, heroina in MDMA. Tako sta se povečali dokazna vrednost in primerljivost rezultatov profiliranja v Evropski uniji, izboljšala pa se je tudi podpora operativnemu delu policije.

V okviru projekta je bilo organizirano srečanje skupine za droge Evropske mreže inštitutov za forenzične znanosti na Bledu 2016, rezultati pa so bili predstavljeni tudi na številnih mednarodnih konferencah v tujini. V Nacionalnem forenzičnem laboratoriju sta bili organizirani tudi dve mednarodni delavnici na področju profiliranja drog in tri nacionalne delavnice (za policiste, Slovenski sistem zgodnjega obveščanja in tožilce) na področju NPS in profiliranja.

Poleg tega je Nacionalni forenzični laboratorij sodeloval in še vedno sodeluje v več projektih, ki so jih vodili tuji laboratoriji, denimo I-See za preiskave prepovedanih drog in DNAxsStats za oblikovanje, validacijo in uvedbo novega verjetnostnega modela za ovrednotenje dokaza DNK.

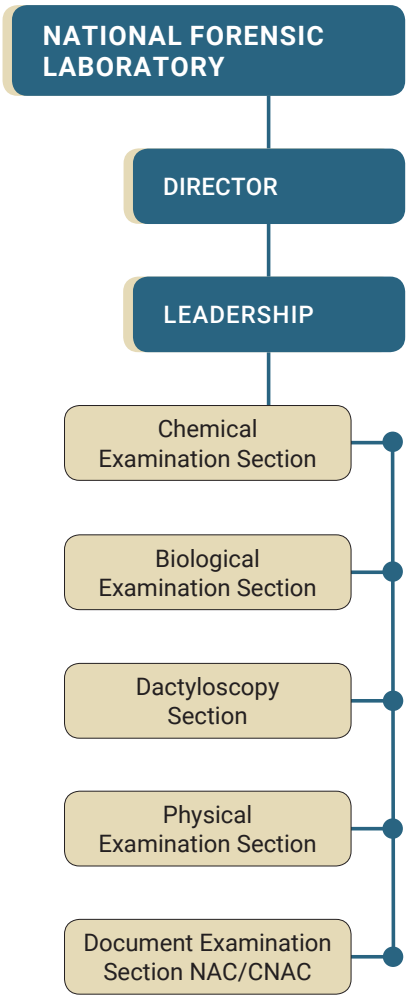
European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) as a strategic advisor, as well as the following Slovenian institutions: the Institute of Forensic Medicine, the National Institute of Public Health and the DrogArt Association.

Methods for profiling cocaine, heroin and MDMA were developed. As a result, the evidential value and comparability of results in the EU were enhanced, while support of the operational departments of the police also increased.

Within the framework of the project, an ENFSI Drugs Working Group meeting was organised in Bled in 2016; the results were presented at numerous international conferences abroad. Two international drug profiling workshops and three national NPS and profiling workshops (for the police, the Slovenian Early Warning System and prosecutors) were organised at the National Forensic Laboratory.

In addition, the National Forensic Laboratory participated and still participates in a series of projects led by foreign laboratories, e.g. I-See for illicit drug tests and DNAxsStats – creating, validating and implementing a new likelihood ratio model for the evaluation of DNA evidence.


NACIONALNI FORENZIČNI LABORATORIJ
DIREKTOR
VODSTVO
Oddelek za kemijske preiskave
Oddelek za biološke preiskave
Oddelek za daktiloskopijo
Oddelek za fizikalne preiskave
Oddelek za preiskavo dokumentov NAC/CNAC


NATIONAL FORENSIC LABORATORY
DIRECTOR
LEADERSHIP
Chemical Examination Section
Biological Examination Section
Dactyloscopy Section
Physical Examination Section
Document Examination Section NAC/CNAC

ODDELKI NACIONALNEGA FORENZIČNEGA LABORATORIJA

Oddelek za biološke preiskave

Oddelek za biološke preiskave je zadnji organizirani oddelek v kriminalističnem laboratoriju. Čeprav je več kot 20 let majhno število bioloških preiskav opravljal kar kemijski laboratorij in je biološki laboratorij začel skromno, z eno samo zaposleno leta 1971, je po skoraj 50 letih to najbolj obremenjen oddelek, ki s preiskavami DNK rešuje najtežja kazniva dejanja v državi. Oddelek skrbi za ugotavljanje fiziološkega izvora bioloških sledi in za genetske preiskave. Do leta 2018 so njegovi zaposleni opravljali tudi morfološke primerjave las ter človeških in živalskih dlak, zdaj pa usposobljeni strokovnjaki te preiskave opravljajo v okviru Oddelka za fizikalne preiskave. Oddelek je vrsto let vodil in vzdrževal evidenco preiskav DNK (kar danes opravlja zaposlena v vodstvu laboratorija), še vedno pa, v skladu z zahtevami Prümske pogodbe, ostaja nacionalna kontaktna točka za mednarodno izmenjavo profilov DNK med državami podpisnicami pogodbe. Slovenija te podatke trenutno izmenjuje s 23 državami članicami.

Preiskave Oddelka za biološke preiskave:

- preliminarne preiskave za ugotavljanje vrste biološke sledi: z barvnimi kemijskimi metodami je mogoče v vzorcu posredno identificirati, ali gre za sled krvi, semenske tekočine ali sline, pri krvi pa je mogoče ugotavljati tudi, ali gre morebiti za menstrualno kri. To so občutljive metode, ki niso

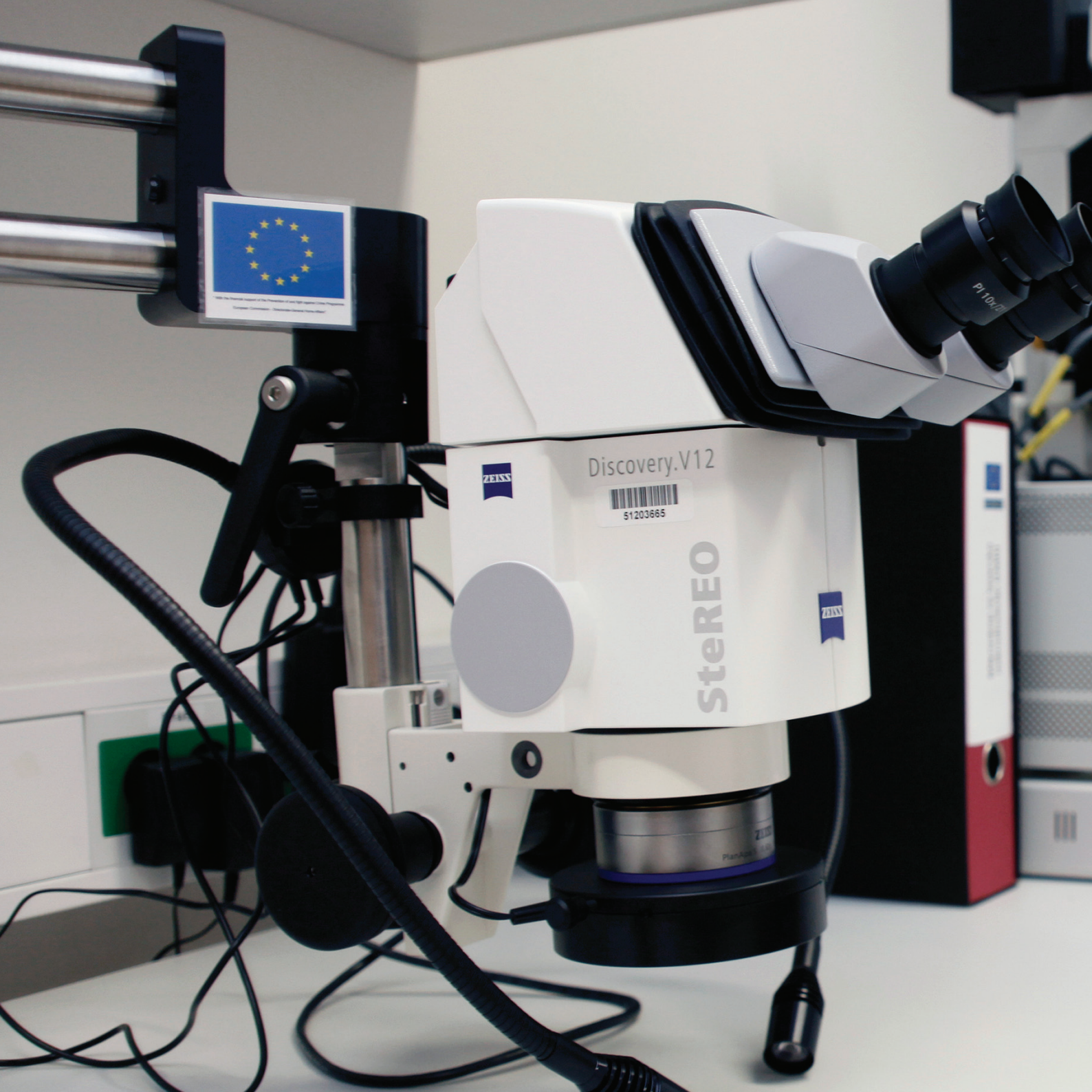
LABORATORIES OF THE NATIONAL FORENSIC LABORATORY

Biological Examination Section

The Biological Examination Section was the last section to be established within the forensic laboratory. Even though the chemical laboratory was in charge of the few biological examinations performed during the initial period of more than 20 years, and even though the biological laboratory's beginnings were modest, with only one employee in 1971, 50 years later, this section has the highest workload and its DNA tests help solve the most serious criminal offences in the country. The section is tasked with the identification of the physiological origin of biological traces and with genetic examinations. Until 2018 the section also performed morphological comparisons of hair fibres, and human and animal hair, whereas, now, examinations of this kind are carried out at the Physical Examination Section. For several years, the section kept and maintained a record of DNA examinations (a task now performed by an employee of the laboratory's management). In accordance with the requirements of the Prüm Treaty, this section also acts as the national contact point for the exchange of DNA profiles between signatories. At the moment, Slovenia exchanges data with 23 Member States.

Examinations of the Biological Examination Section:

- Preliminary examinations to establish the type of biological trace: chemical methods such as colour tests are used to indirectly identify whether the trace is blood, seminal fluid or saliva, whereby it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51203665
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povsem specifične, kar lahko da tudi napačno pozitiven rezultat;

- imunokromatografske preiskave za ugotavljanje vrste biološke sledi so potrditvena metoda za ugotavljanje prisotnosti krvi, semenske tekočine in sline v vzorcu;
- identifikacija telesnih tekočin človeškega izvora z uporabo biomarkerjev informacijske RNK: na podlagi biomarkerjev mRNK (informacijska RNK) lahko identificiramo vaginalne izločke, menstrualno kri ali slino;
- klasične preiskave jedrne DNK oziroma tipizacija lokusov STR in dela amelogeninskega gena za določanje spola osebe in določitev identitete osebe v vzorcu sledi. Uporabljajo se tudi pri ugotavljanju biološkega starševstva in drugih sorodstvenih razmerij. Za vse te preiskave (razen določanje spola) potrebujemo primerjalne vzorce osumljencev, oškodovancev ali domnevnih sorodnikov;
- preiskava jedrne DNK vzorcev z razgrajeno DNK (stari vzorci, sledi dotikanja, sledi na umazani podlagi) z inhibitorji pomeni tipizacijo skrajšanih lokusov STR, amelogeninski gen pa se tipizira enako kot pri klasični tipizaciji. Namen in zahteve preiskave so enake kot pri klasični tipizaciji;
- preiskava jedrne DNK vzorcev z nizko količino DNK (vzorci z nizko količino DNK humanega izvora ali mešanico več oseb) – postopki in namen so enaki kot pri klasični preiskavi jedrne DNK in preiskavi DNK vzorcev z razgrajeno DNK;
- preiskava moške DNK obsega tipizacijo lokusov DNK na moškem spolnem kromosomu Y. S preiskavo se določi haplotip STR moškega v vzorcu in na podlagi primerjave s primerjalnim vzorcem ugotavlja ujemanje haplotipov. Metoda ni individualizacijska.

is possible to establish whether the blood trace comes from menstrual blood. These are sensitive methods that are not completely specific and therefore can give false positive results.

- Immunochromatographic tests to establish the type of biological trace are confirmatory methods to establish the presence of blood, seminal fluid or saliva in the sample.
- The identification of human bodily fluids with biomarkers of the messenger RNA: mRNA (messenger RNA) biomarkers are used to identify vaginal discharge, menstrual blood or saliva.
- Standard examinations of nuclear RNA or STR typing of loci and a part of the amelogenin gene determine the sex and the identity of the person from the sample. It is also used to perform paternity tests and establish other family relationships. For all of the above-mentioned examinations (except for determining sex), comparison samples of suspects, injured parties and alleged relatives are required.
- Nuclear DNA examination of samples with degraded DNA (old samples, mishandling, traces on dirty surfaces) with inhibition entails mini-STR testing, while the typing of the amelogenin gene is conducted as it would be with standard typing. The purpose and requirements of this examination are the same as those of standard typing.
- Nuclear DNA examination of samples with minute amounts of DNA (samples of human DNA in minute amounts or samples of the DNA material of more than one person) – the procedures and purpose are the same as with standard nuclear DNA examinations and nuclear DNA examinations of samples with degraded DNA.

dualno specifična, ob določenih predpostavkah pa se uporablja za ugotavljanje sorodstva po moški liniji, kadar so na voljo le oddaljeni sorodniki, in za identifikacijo količinsko skromnih bioloških sledi moškega izvora;

- obdelava podatkov v evidenci preiskav DNK: vnos, iskanje in povezovanje ujemajočih se profilov STR med osebami in sledmi v evidenci DNK zaradi iskanja osumljencev kaznivih dejanj ali povezovanja kaznivih dejanj med seboj ter ugotavljanja upravičenosti hrambe podatkov DNK v evidenci DNK.

- The examination of male DNA consists of the DNA typing of loci on the Y chromosome. With this examination, the Y-chromosome STR haplotype in the sample is determined and, based on the comparison sample, haplotype matches are identified. The method is not individually specific and is used, under some conditions, for the identification of kinship thorough the male line when only distant relatives are available and for the identification of minute amounts of male biological traces.
- Data processing in the database of DNA examinations: the entry, search for and linking of matching STR profiles between persons and traces in the DNA database; for investigating suspects in criminal offences or linking criminal offences, and ensuring the eligibility of DNA data retention in the DNA database.


BERETTA

Oddelek za fizikalne preiskave

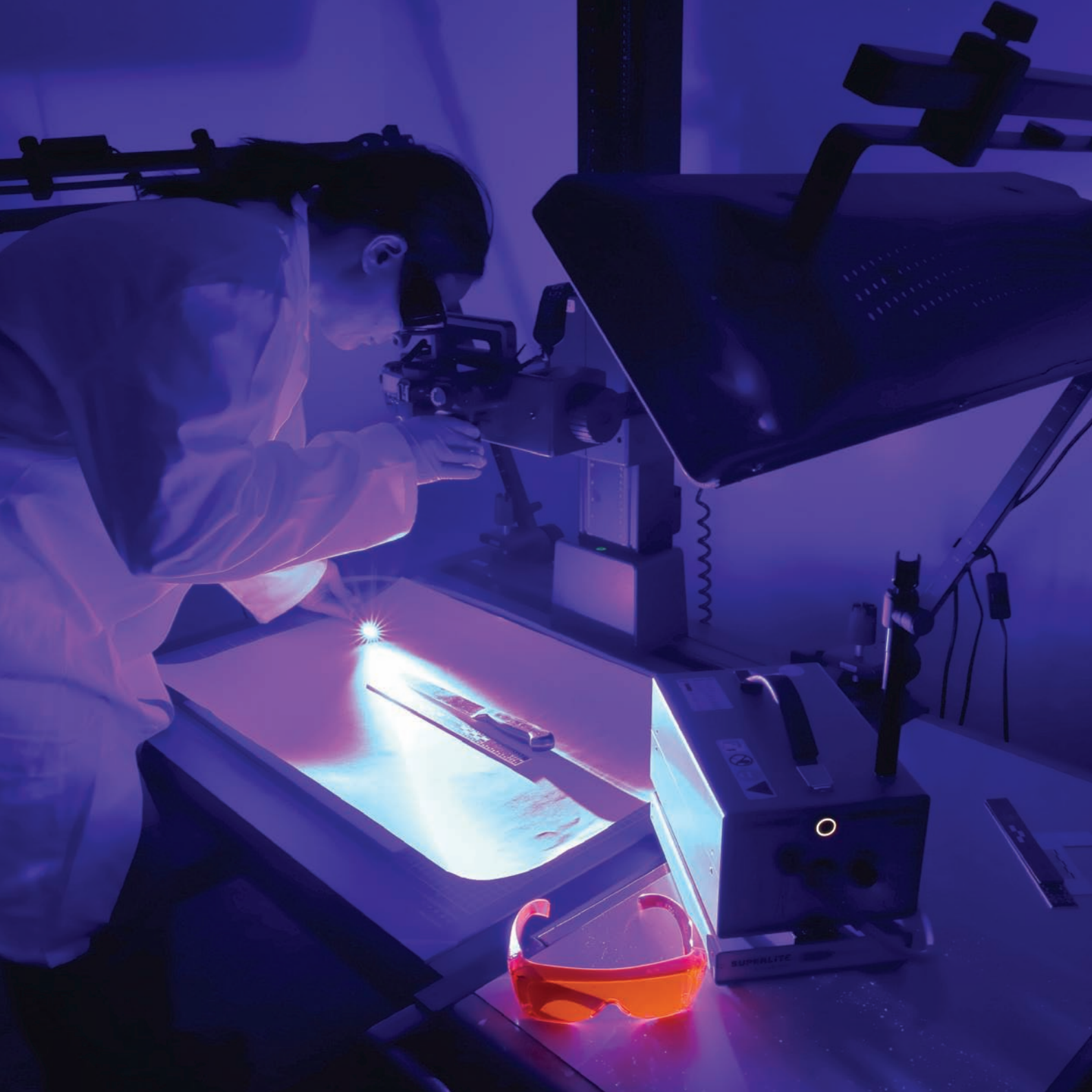
Oddelek za fizikalne preiskave zajema največ različnih strokovnih področij forenzike, in sicer preiskave tekstilnih vlaken, orožja, sledi orodja in obuval, stekla in zemlje, sledi v zvezi s prometnimi nesrečami, preiskave električnih in eksplozivnih naprav, sledi, povezanih s požari, ter preiskave sledi z rok strelca in strelne razdalje. Na oddelku med drugim preizkušajo balistično zaščito protistrelnih zaščitnih materialov in izdelkov ter strelnega orožja in streliva. Tudi na začetku delovanja so opravljali podobne preiskave, poleg tega pa še primerjave rastlinskih in živalskih sledi ter identifikacije sledi nog, preiskave barv in lakov, las, tekstilnih vlaken, človeških izločkov in zob; preiskovali so tudi ponarejen denar, štampiljke, znamke in umetniške predmete. Danes so nekatere preiskave naloga drugih oddelkov (preiskave barv in lakov kemijskega izvora, človeških izločkov in zob biološkega izvora, preiskave denarja in štampiljk pa opravljajo na Oddelku za preiskave dokumentov), zanimivo pa je, da so preiskave tekstilnih vlaken dolgo časa opravljali na Oddelku za biološke preiskave (po njegovi ustanovitvi), danes pa so ponovno del Oddelka za fizikalne preiskave, ki opravlja naslednje preiskave:

- preiskave tekstilnih vlaken in tekstilij s stereomikroskopijo za iskanje in izločanje vlaken, primernih za nadaljnje preiskave; primerjalna mikroskopija z navadno in polarizirano svetlobo za ugotavljanje morfološke enakosti vlaken; UV/VIS-spektrofotometrija za ugotavljanje enakosti barv vlaken; z infrardečo spektrofotometrijo se ugotavlja kemijska sestava vlaken; pregled in opredelitev mehanskih, termičnih in kemijskih poškodb tkanin;

Physical Examination Section

The Physical Examination Section covers the greatest variety of specialised areas in forensic science, from textile fibre examinations, examinations of weapons, traces of tools and footwear, glass, soil, and traces in connection with traffic accidents, to electrical devices, explosive devices, traces in connection with fires, the examination of traces from the hands of a shooter, and determining firing distance. The section also carries out ballistic testing of bullet-proof protection material and products and testing of firearms and ammunition. When it began operations, its tasks were to perform similar examinations and also to carry out comparisons of plant and animal traces, the identification of footprints, and examinations of paints and varnishes, human excrement and teeth; furthermore, it investigated counterfeit currency, seals, stamps and artworks. Today, some of these tasks are assigned to other sections (the examination of paints and varnishes is carried out by the Chemical Examination Section, the examination of human excrement and teeth by the Biological Examination Section, the examination of counterfeit currency and stamps by the Document Examination Section). Interestingly, textile fibre examinations were in the domain of the Biological Examination Section (after its creation), but are, today, again performed by the Physical Examination Section, which carries out the following examinations:

- Examinations of textile fibres and textiles with stereomicroscopy to search for and identify fibre suitable for further examination; comparison microscopy with regular and polarised light to establish the morphological likeness of fibres;


SUPERLITE

- preiskave morfoloških značilnosti las in dlak omogočajo ugotavljanje izvora las na podlagi primerjave morfoloških značilnosti (pri dlakah je to mogoče le pri sramnih dlakah), ugotavljanje kozmetične obdelave las (beljenje, barvanje in drugo), ugotavljanje poškodb las in dlak (mehanskih, termičnih in kemijskih) ter njihove razvojne stopnje (anagena, katagena in telogena);
- preiskave sledi obuval z namenom ugotavljanja skladnosti med zavarovano sledjo obuvala in konkretnim obuvalom;
- primerjava sledi orožja na kroglah in tulcih orožja za identifikacijo konkretnega orožja, uporabljenega na kraju dejanja (potrebno je primerjalno streljanje); določitev vrste orožja, kadar so na voljo tulci in/ali krogle, ne pa orožje samo; ugotavljanje tehnične brezhibnosti orožja in njegove nevarnosti pri predelavah;
- preiskave sledi na odlomljenih ključavnicah, bodisi za povezovanje s konkretnim orodjem bodisi za povezovanje kaznivih dejanj med seboj; ugotavljanje sledi specialnega orodja v ključavnicah; preiskave zdrsnin, odtisnin in prereznin, da bi ugotovili, ali je sled na kraju povzročilo zaseženo orodje; primerjava odlomljenih ali odrezanih delov, da se ugotovi, ali sta dela pred lomom ali rezom sestavljala celoto;
- ugotavljanje vzroka nastanka požara ali eksplozije, pri čemer je treba najprej določiti mesto nastanka požara oziroma eksplozije, nato pa z analizo najdenih sledi ugotoviti vzrok dogodka; preiskave električnih inštalacij in naprav in preiskave avtomobilskih žarnic;
- ugotavljanje poškodb na pnevmatikah in platiščih koles (ali je poškodba nastala pred nesrečo ali je

ultraviolet-visible spectrophotometry to establish the likeness of colours in fibres; infrared spectrophotometry to establish the chemical composition of fibres; the examination and determination of mechanical, thermal and chemical damage to textiles

- Examinations of the morphological characteristics of hair and body hair to facilitate identification of the origin of the hair based on a comparison of morphological characteristics (with body hair this is only possible with pubic hair), the identification of cosmetic hair treatments (bleaching, dyeing, etc.), the identification of hair and body hair damage (mechanical, thermal, chemical) and their growth cycle stages (anagen, catagen, telogen)
- Examinations of footwear trace evidence for the purpose of establishing that the collected trace corresponds with the footwear in question
- A comparison of markings left by weapons on bullets and casings to identify the concrete weapon used at the scene (a firing test is required for comparison); determining the weapon type when bullet casings and/or bullets are available, but not the weapon itself; determining whether the weapon is in perfect working condition and the danger it poses in case of modification
- Examinations of broken-off locks, either to link them to a specific tool or to link criminal offences; identifying traces of specialist tools used on locks; investigations of slip marks, impressions and cut marks to establish whether there are any traces of confiscated tools at the scene; a comparison of broken-off or cut-off parts to establish whether the parts were a part of a whole before being broken/cut off


OXFORD
INSTRUMENTS
NEC
Aztec

posledica nesreče), preiskava stanja žarilne nitke (ali je žarnica v trenutku nesreče svetila) ter preiskave stekla in zemlje;

- preiskave sledi z rok strelca, analiza anorganskih elementov z vrstičnim elektronskim mikroskopom SEM-EDX in analiza srebra v pasteh za domače tatove z atomsko absorpcijo;
- preiskovanje posnetkov varnostnih kamer, videodokumentiranje, 3D-skeniranje in snemanje z brezpilotnim letalnikom;
- določanje strelne razdalje glede na morfološke značilnosti strelnih poškodb in s kemijskimi testi.

- Establishing the cause of fires or explosions regarding which identifying the point of origin of a fire/explosion is the priority, followed by the analysis of evidence found at the scene and establishing the cause of the incident; investigations of electrical installations and devices and car lamps
- Identifying tyre or rim damage (whether it was caused before the accident or was a consequence of the accident), the examination of electric filaments (whether the filament was on during the accident), examinations of glass and soil
- Traces from a shooter's hands are also examined, while inorganic elements are analysed with a scanning electron microscope (SEM-EDX); analysis of silver from traps for burglars is performed by atomic absorption
- Examinations of surveillance tapes, video documentation, 3D scanning and filming by drone
- Determining the firing distance based on the morphological characteristics of gunshot wounds and chemical tests

Oddelek za kemijske preiskave

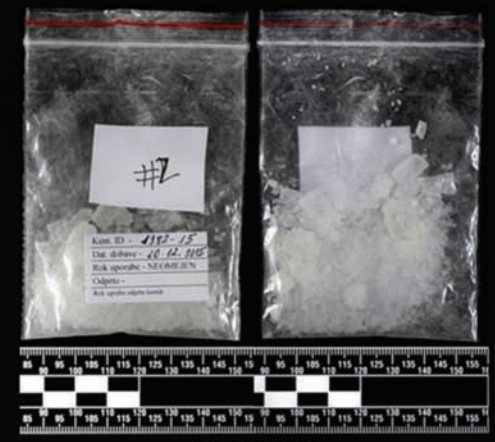
Oddelek za kemijske preiskave je zaradi posebnega načina analiziranja neznanih snovi oddelek z največ instrumentalne opreme v Nacionalnem forenzičnem laboratoriju in tudi oddelek, ki obvladuje največ različnih instrumentalnih metod. Ob ustanovitvi se je imenoval Kemični laboratorij, analiziral pa je tekočine, madeže, neznane snovi in mamila ter kemijsko sestavo barv, lepil, smodnika in drugega eksploziva. Zaposleni so preiskovali tudi črnila in papir, ugotavljali starost zapisov, napisanih s črnilom, in restavrirali mehanično ali kemično izbrisana besedila ali prekrite zapise, kar danes opravlja Oddelek za preiskave dokumentov NAC/CNAC (le nekatere izmed navedenih preiskav v omejenem obsegu). Preiskovali so tudi ostanke pri požigih in samovžigih. Čeprav danes nekaterih izmed navedenih preiskav ne opravljajo več, so z razvojem kemijske analitike dejansko dobili še več nalog, rezultate analiz pa je mnogo težje interpretirati. Oddelek trenutno opravlja naslednje dejavnosti:

- preiskave premazov na orodjih, barvnih sledi z vlomov in avtomobilskih lakov – na podlagi primerjalne analize kemijske sestave se kraj dejanja povezuje z orodjem, lak z vozila pa s sledmi na oblačilih in drugih vozilih. V nekaterih primerih je na podlagi analize avtomobilskega laka mogoče določiti znamko in model vozila;
- preiskovanje varnostnih barvil za označevanje bankovcev – s primerjalno analizo se ugotovi, katero varnostno barvilo se je sprostilo iz barvne pasti pri ropih finančnih institucij. Z določitvijo vrste varnostnega barvila in identifikacijo specifičnih označevalcev (taggantov) se bankovci lahko povežejo s konkretnim dogodkom, ropom;

Chemical Examination Section

Due to its specific methods for analysing unknown substances, the Chemical Examination Section operates with the most extensive instrumentation equipment in the National Forensic Laboratory and also employs the widest range of instrumental methods. At the time it was established, this section was known as the chemical laboratory and carried out analyses of fluids, stains, unknown substances, drugs, adhesives, gunpowder, and other explosives, and determined the chemical composition of colours; it also investigated inks and paper, determined the age of ink-written script, and restored mechanically or chemically erased or hidden text, which is now the task of the Document Examination Section NAC/CNAC (some of the above-mentioned examinations are limited in scope). It also examined arson debris and investigated spontaneous ignitions. Even though some of the aforementioned examinations are no longer carried out, the development of analytical chemistry resulted in even more tasks, while the analysis results became even more difficult to interpret. The section currently performs the following activities:

- Examinations of tool coatings, traces of paint evidence from burglaries, car paint – based on a comparative analysis of the chemical composition, the crime scene can be linked to a certain tool, and car paint to colour traces on clothes or other vehicles. In some cases, the brand and model of a car can be established based on the analysis of car paint.
- The examination of security dyes used to mark banknotes – on the basis of a comparative analy-



2-NMC HCl
KEM ID-1382-15

4-Cl-PPP HCl
KEM ID - 1392-15

5 - PPDI
KEM - ID 1205-15

5 - PPDI
KEM - ID 1205-15

5 - PPDI
KEM - ID 1205-15

5F-SDB 005
KEM ID-1389-15

25 I - NBOH
KEM ID - 1383-15

25C-NBF
KEM ID-1385-15

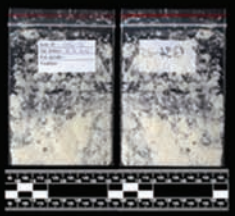
DIBUTYLONE HCl
KEM ID-1395-15

EG-018
KEM ID-1388-15

FUB-AMB
KEM ID-1387-15

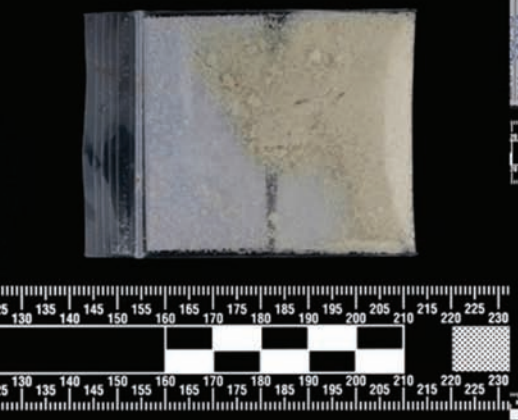
BK-ETHYL-K HCl
KEM ID-1390-15

FUB-AMB
KEM ID-1387-15



FU-F HCl
KEM ID-1394-15

4F- BF HCL
KEM - ID 1259-15



4F- BF HCL
KEM - ID 1259-15

4F- BF HCL
KEM - ID 1259-15

EG-018
KEM ID-1388-15

APP-PICA
KEM - ID 1378-15

U-47700 HCl
KEM ID-1381-15

BK-IVP HCl
KEM ID-1384-15

- preiskave eksplozivnih snovi in eksplozij – ugotavljanje vzroka, vrste in izvora eksplozije;
- preiskave sledi po eksploziji in eksplozivnih naprav – ugotavljanje načina aktiviranja, delovanja in namena eksplozivne naprave, tudi rekonstrukcija eksplozivne naprave;
- identifikacija vrste eksploziva, preiskave predhodnih sestavin (prekurzorjev) za proizvodnjo eksplozivnih snovi in primerjave eksploziva;
- preiskave požarov in požarnih ostankov – ugotavljanje vzroka, vrste in izvora požara ter prisotnosti pospeševalcev gorenja oziroma vzroka nastanka požara;
- identifikacija, klasifikacija in kemijska primerjava vnetljivih tekočin – ugotavljanje prisotnosti ostankov vnetljivih tekočin na požarnih ostankih ter njihova identifikacija in klasifikacija po standardu ASTM in ugotavljanje istovrstnosti vnetljivih tekočin;
- identifikacija prepovedanih drog v značilnih nezakonitih zmeseh ter identifikacija aktivnih in neaktivnih dodatkov in spremljajočih spojin;
- kvantifikacija (določanje vsebnosti prepovedane spojine v nezakonitih zmeseh) pogostejših vrst prepovedanih drog;
- primerjalne preiskave (profiliranje) pogostejših vrst prepovedanih drog z namenom ugotavljanja možnega skupnega izvora vzorcev;
- preiskave in identifikacije predhodnih sestavin (prekurzorjev) za proizvodnjo prepovedanih drog;
- preiskave in identifikacije novih psihoaktivnih snovi (NPS) ter obveščanje v okviru evropskega Sistema za zgodnje obveščanje o pojavu novih psihoaktivnih snovi – EWS;

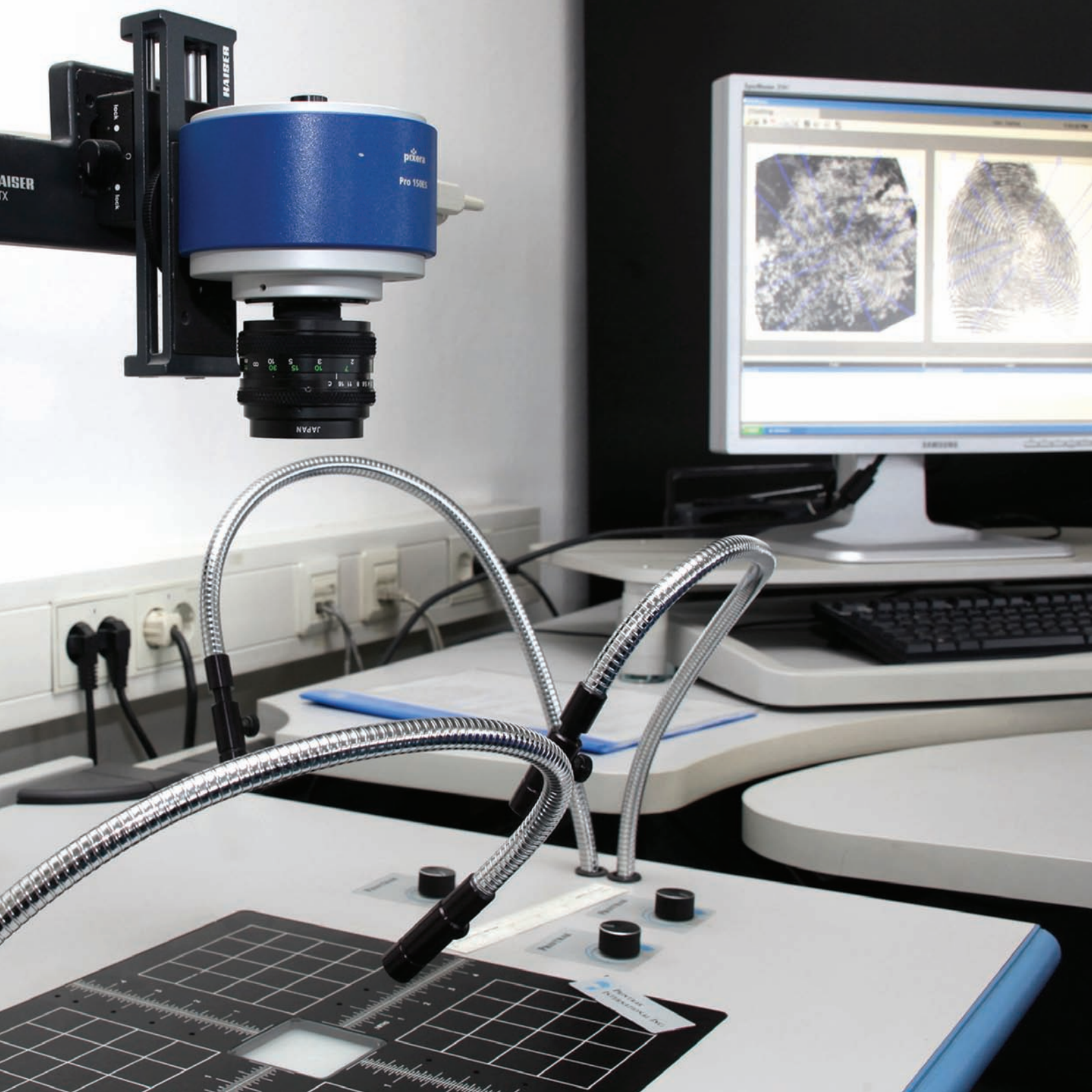
sis it can be established which security dye was released from the dye pack during the robbery of a financial institution. Based on identification of the type of security dye and specific taggants, the banknotes can be linked to a particular event or robbery.

- Examination of explosive materials and explosions – establishing the cause, type and centre of the explosion.
- Examinations of the traces after the explosion and explosive devices – establishing the type of activation, functioning and purpose of the explosive device, and reconstruction of the explosive device.
- Identification of the type of explosive, investigation of explosive precursors and a comparison of explosives.
- Investigation of fires and fire debris – establishing the cause, type and origin of fires, establishing the presence of fire accelerants or the cause of a fire.
- Identification, classification and chemical comparison of flammable liquids – establishing the presence of flammable liquid residue on fire debris, and the identification and classification thereof in accordance with the ASTM international standard; establishing the identity of flammable liquids.
- Identification of illicit drugs in common illicit compounds and the identification of active and inactive ingredients and excipients.
- Quantification of the most common illicit drugs (assaying banned substances in illicit compounds).


Thermo
SCIENTIFIC
TruDefender FTX
kemija : Scan031
TNT (Trinitrotoluene)
Explosives, NIOSH, Restricted, UN
CAS: 118-96-7
similar item

- preiskave lepilnih trakov in lepil, plastičnih materialov in solzivcev (dražilnih razpršilnikov);
- onesnaženje okolja v omejenem obsegu (vzorci površinskih vod in zemlje);
- druge vrste kemijskih preiskav (analize neznanih snovi, ki so povezane z različnimi vrstami kaznivih dejanj – v omejenem obsegu);
- zaradi obveznosti Republike Slovenije o mednarodnem poročanju (v Evropski center za spremljanje drog in odvisnosti od drog – EMCDDA in Urad združenih narodov za droge – UNODC) na področju drog in sorodnih snovi oddelek izvaja tudi monitoring (vzorčenje, kemijske preiskave – kvantifikacija in statistična ovrednotenja rezultatov) za klasične droge (kot na primer konoplja, heroin, kokain, MDMA, amfetamin, metamfetamin). Poročila o monitoringu so objavljena tudi na spletnih straneh Nacionalnega forenzičnega laboratorija. Oddelek identifikacijo novih psihoaktivnih substanc (NPS), ki so v Sloveniji prvič zaznane, v realnem času sporoča v podatkovno bazo EMCDDA. Za EMCDDA dvakrat letno pripravlja tudi sumarna polletna in letna poročila o vseh zasegih policije.

- Comparative profiling of the most prevalent illicit drugs to establish a possible common source of samples.
- Investigation and identification of drug precursors used for the production of illicit drugs.
- Investigation and identification of new psychoactive substances (NPS) and information exchange within the Early Warning System on new psychoactive substances – EWS.
- Examination of adhesive tapes and adhesives, plastic materials, and tear gas sprays (irritant sprays).
- Environmental pollution in a limited scope (samples of surface waters and soil).
- Other types of chemical examinations (the analysis of unknown substances linked with different kinds of criminal offenses – limited scope).
- Due to the Republic of Slovenia's obligations as regards international reporting (to EMCDDA and UNODC) on drugs and related substances, the section carries out **monitoring** tasks (sampling, chemical analysis – quantification and statistical processing of results) related to classic drugs (cannabis, heroin, cocaine, MDMA, amphetamines, methamphetamines). Monitoring reports are also published on the National Forensic Laboratory's website. The section submits reports on the identification of **new psychoactive substances (NPS)** detected in Slovenia for the first time to the EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) in real time. The section also prepares half-yearly and annual summary reports on all police seizures for the EMCDDA.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JAPAN

Oddelek za daktiloskopijo

Daktiloskopija je prva znanstveno utemeljena metoda, ki se je na prelomu 19. in 20. stoletja začela uporabljati za identifikacijo storilcev kaznivih dejanj. Daktiloskopski odsek je prvotno vodil centralno kartoteko splošne daktiloskopije in monodaktiloskopije, kartoteko opisov dlani hujših storilcev in kartoteko prstnih sledi, najdenih na kraju kaznivega dejanja. Danes so kartoteke združene v okviru sistema AFIS, oddelek pa je tudi skrbnik zakonsko opredeljene evidence daktiloskopiranih oseb. Poleg identifikacij storilcev in žrtev kaznivih dejanj se ukvarja tudi z mednarodno izmenjavo sledi in prstnih odtisov storilcev v skladu s Prümsko pogodbo z 20 državami podpisnicami.

Delo oddelka je razdeljeno na tri delovna področja. Prvo je izzivanje sledi papilarnih linij na predmetih s krajev kaznivih dejanj in drugih dogodkov. Izzivanje sledi se večinoma opravlja z akreditiranimi metodami (s cianoakrilatnimi estri, ninhidrinom ali DFO). Nato strokovnjaki sledi vizualizirajo s forenzičnimi svetlobnimi viri in različnimi daktiloskopskimi praški.

Drugo področje dela je daktiloskopska primerjava odtisov papilarnih linij z odtisi papilarnih linij in odtisov papilarnih linij s sledmi papilarnih linij. Postopek primerjave se opravlja z metodo ACE-V, torej analizo sledi in odtisa, primerjavo spornega in primerjalnega materiala, vrednotenjem ugotovitev in postopkom verifikacije drugega izvedenca.

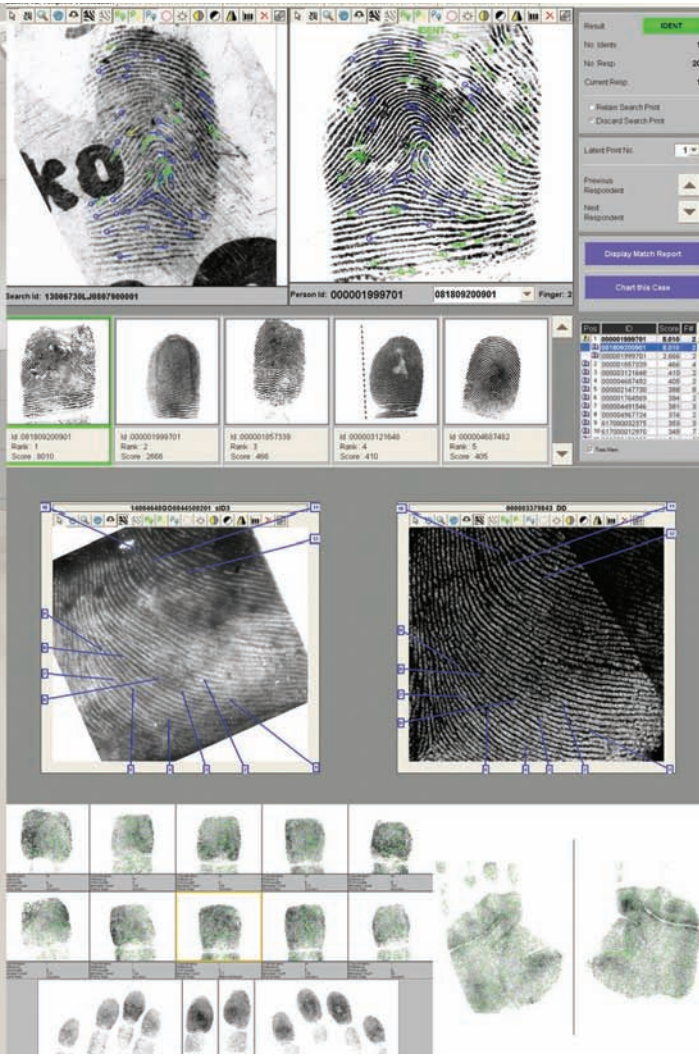
Ugotavljanje in potrjevanje identitete oseb in trupel je tretje področje dela. Identiteta se potrjuje na podlagi primerjave papilarnih linij in daktiloskopiranih oseb in trupel. Zaradi prisotnosti papilarnih linij na stopalih lahko na oddelku opravijo tudi tovrstne preiskave

Dactyloscopy Section

Dactyloscopy was the first method for identifying perpetrators based on scientific grounds, with its beginnings dating back to the late 19th and early 20th centuries. Initially, the Dactyloscopy Section managed the "central record of general and monodactyloscopy, records of palm prints from serious offenders, and a record of fingerprints found at crime scenes." Today, the records are kept within the AFIS, while the section also acts as a repository for the legally defined record of persons from whom dactyloscopic data were acquired. In addition to identifying the perpetrators and victims of criminal offences, the section is also the contact point for the international exchange of dactyloscopic data (traces and fingerprints) with 20 signatory states in accordance with the requirements of the Prüm Treaty.

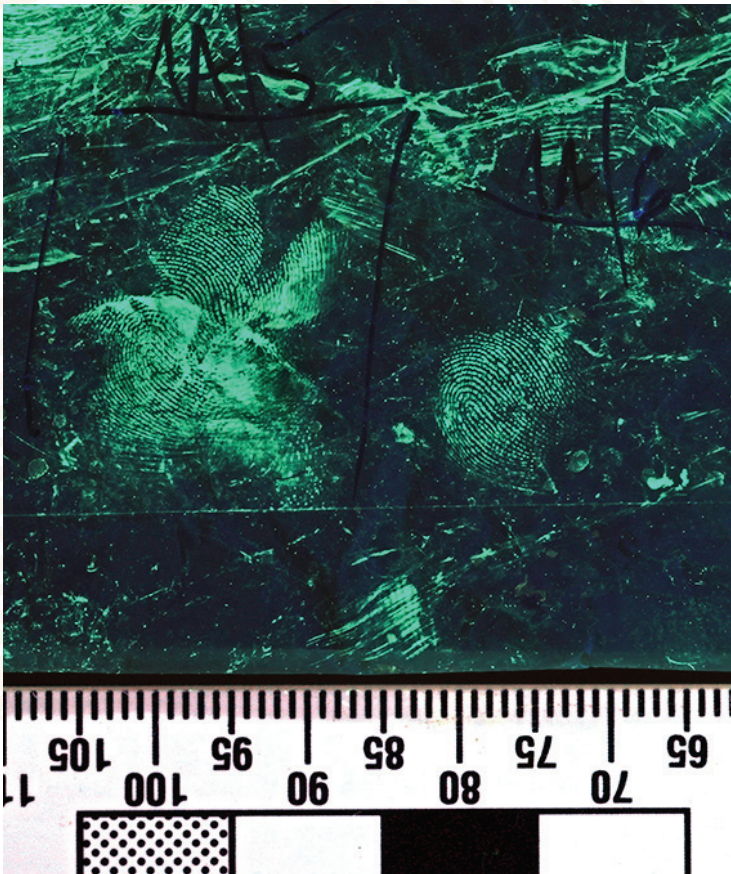
The section's activities are divided into three work fields: The first field concerns the procedures for the trace lifting of papillary line prints from crime scenes and other incidents. Trace lifting is carried out in accordance with accredited methods (with cyanoacrylate esters, ninhydrin or DFO). Our experts visualise the traces with forensic light sources and various dactyloscopic powders.

The second work field encompasses the dactyloscopic comparison of papillary line prints with papillary line prints, and of papillary line prints with papillary line traces. Comparison is carried out according to the ACE-V method: analysis of traces and prints, comparison of the material in question with the comparison sample, evaluation of the findings, and verification by a second expert.



in primerjave. V primeru množičnih nesreč oddelek delno vodi in usklajuje policijski del identifikacijskih postopkov.

Establishing and verification of the identity of persons and corpses is the third field of work. The identity is verified on the basis of the comparison of papillary lines and dactyloscopic data acquired from persons and corpses. Because papillary lines are also found on soles, the section can also carry out examinations and comparisons of this kind. In the event of mass emergencies, the section is partially in charge of and coordinates the identification procedures of the police.

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Oddelek za preiskave dokumentov NAC/CNAC

Oddelek za preiskave dokumentov NAC/CNAC se je dolgo imenoval Sektor za grafološke preiskave, čeprav so njegovi strokovnjaki vrsto let opozarjali, da njihova dejavnost niso grafološke ekspertize, ampak forenzično preiskovanje rokopisov in podpisov. Zaradi svoje majhnosti je bil od leta 1996 do 2000 preimenovan v Referat za preiskavo dokumentov, od leta 2000 do 2006 se je imenoval Oddelek za preiskave rokopisov in dokumentov, od leta 2006 pa Oddelek za preiskave dokumentov NAC/CNAC. Ob ustanovitvi leta 1950 so bile njegove naloge preiskovanje dokumentov in primerjanje rokopisov in strojnih pisav (tipkopisov), v sodelovanju s kemičnim laboratorijem pa je opravljal tudi preiskovanje ponarejanja in prenarejanja dokumentov, vrednostih papirjev in računov. Poleg identificiranja piscev rokopisov in podpisov ter identifikacije strojnih pisav je pripravljal tudi zbirko tipkopisov, ki danes ni več v uporabi, in zbirko anonimnih pisem, ki je še vedno uporabna.

Oddelek trenutno opravlja naslednje dejavnosti:

- preiskave rokopisov z namenom ugotavljanja istovetnosti oziroma neistovetnosti dveh ali več rokopisnih zapisov, s čimer je mogoče ugotoviti avtorja zapisa;
- preiskave podpisov z namenom ugotavljanja istovetnosti oziroma neistovetnosti dveh ali več podpisov, s čimer je mogoče ugotoviti avtorja podpisa;
- preiskave identifikacijskih dokumentov in dokumentov v pravnem prometu (pogodbe, oporoke, zavarovalne police ipd.) – ugotavljanje, ali je do-

Document Examination Section NAC/CNAC

The Document Examination Section NAC/CNAC was long known as the Graphology Examination Section, although its experts argued for years that their domain was not preparing graphology expert opinions but performing forensic investigations of manuscripts and signatures. From 1996 to 2000 it operated as the Document Examination Desk due to its small size; in 2000, it was renamed the Manuscript and Document Examination Section, and since 2006 it has been known as the Document Examination Section NAC/CNAC. When it was founded in 1950, its tasks were to perform document examinations and manuscript and dacytloscript comparisons, while it also investigated the "counterfeiting and falsification of documents, securities and invoices" in cooperation with the "chemical" laboratory. In addition to identifying authors of manuscripts and signatures and identifying dactyloscripts, it also kept a record of dactyloscripts, which is no longer in use, and a collection of anonymous letters, which is still being used.

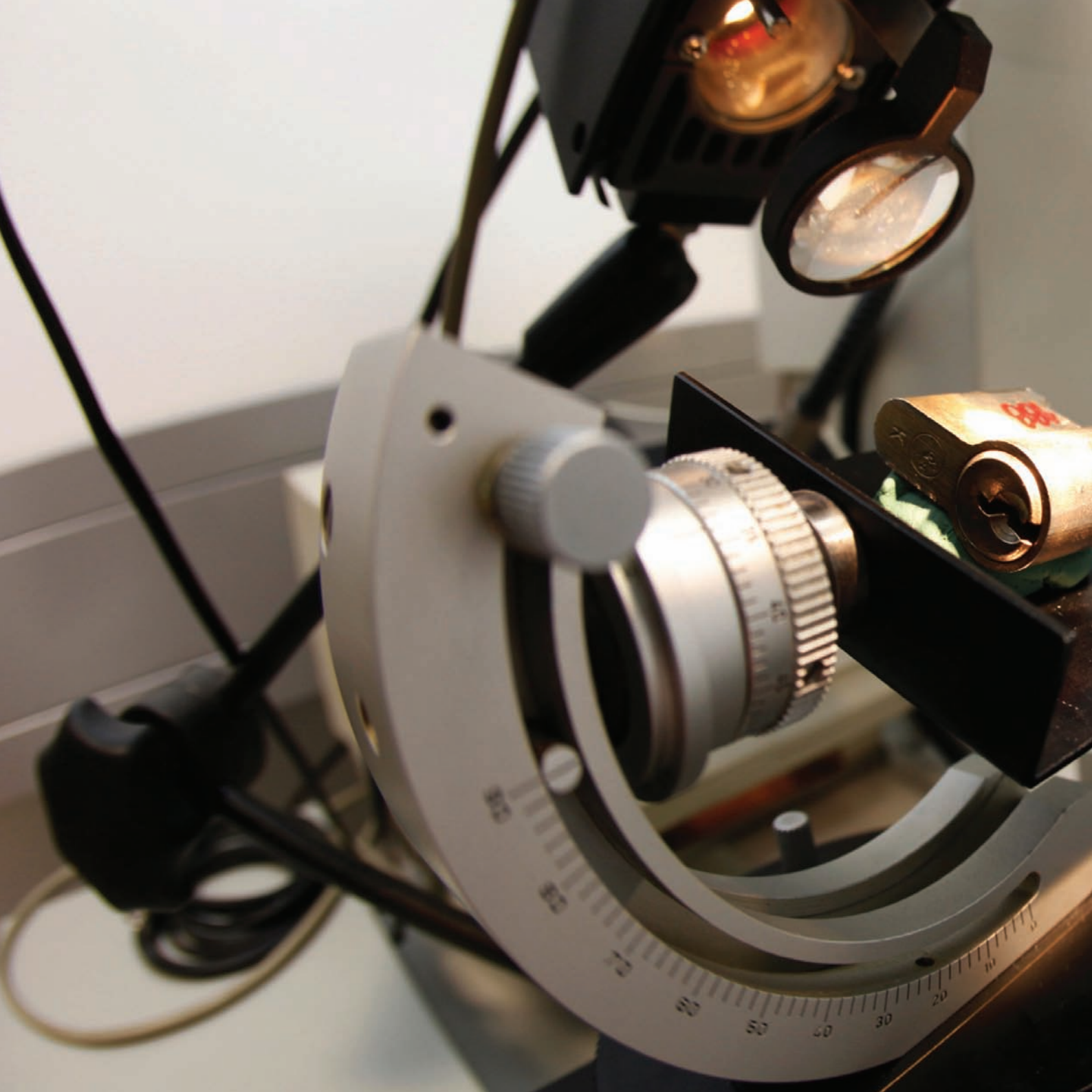
- Examinations of manuscripts to establish the identity of two or more manuscripts, which may be used to identify the manuscript's author.
- Examinations of signatures to establish the identity of two or more signatures, which are used to identify the signatory.
- Examinations of identity documents and documents in legal transactions (contracts, wills, insurance policies, etc.) – establishing whether the document is authentic, forged or changed, establishing the method used to forge documents,

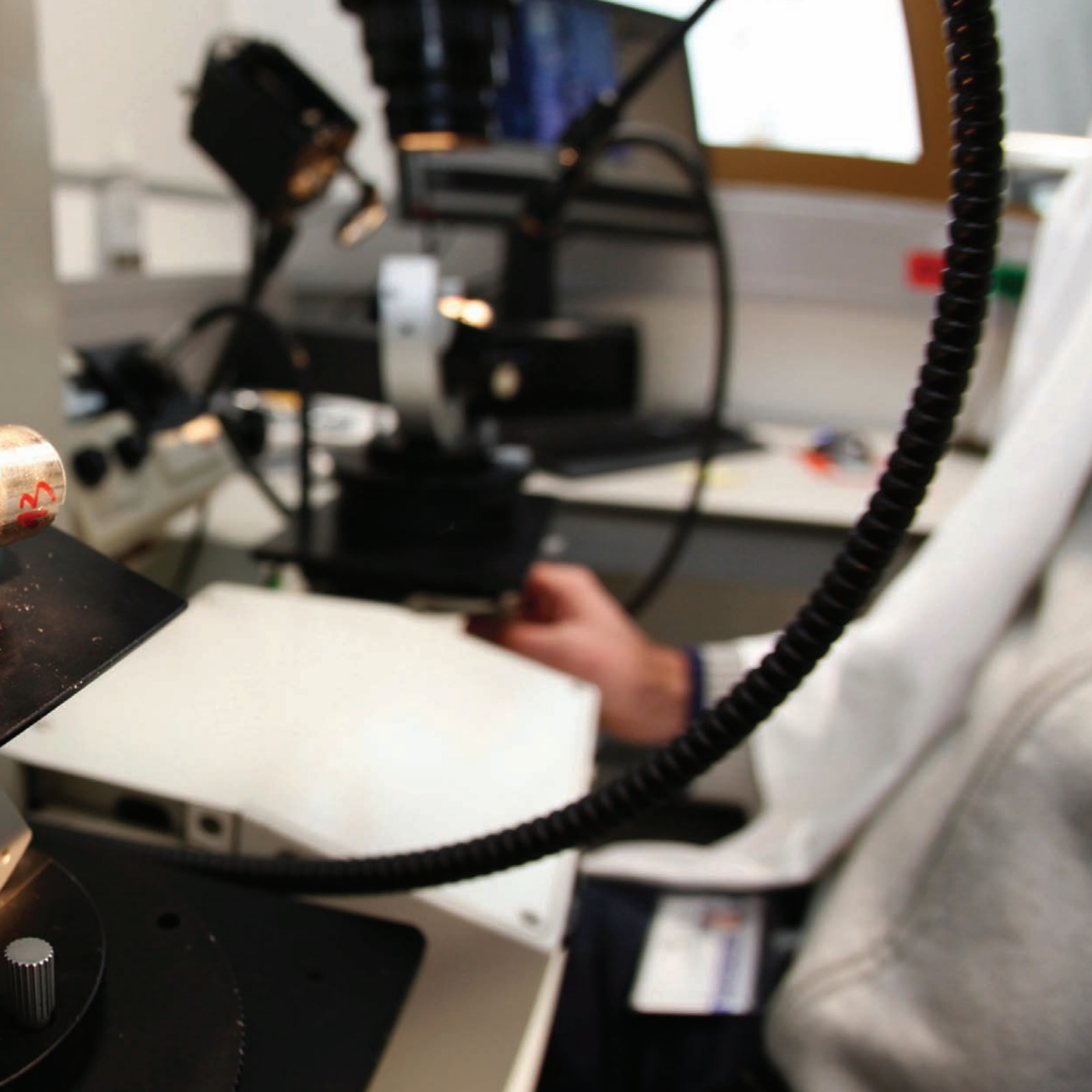
kument pristen, ponarejen ali spremenjen, ugotavljanje načina izdelave ponarejenih dokumentov in ugotavljanje, kateri deli dokumentov so spremenjeni in kako;

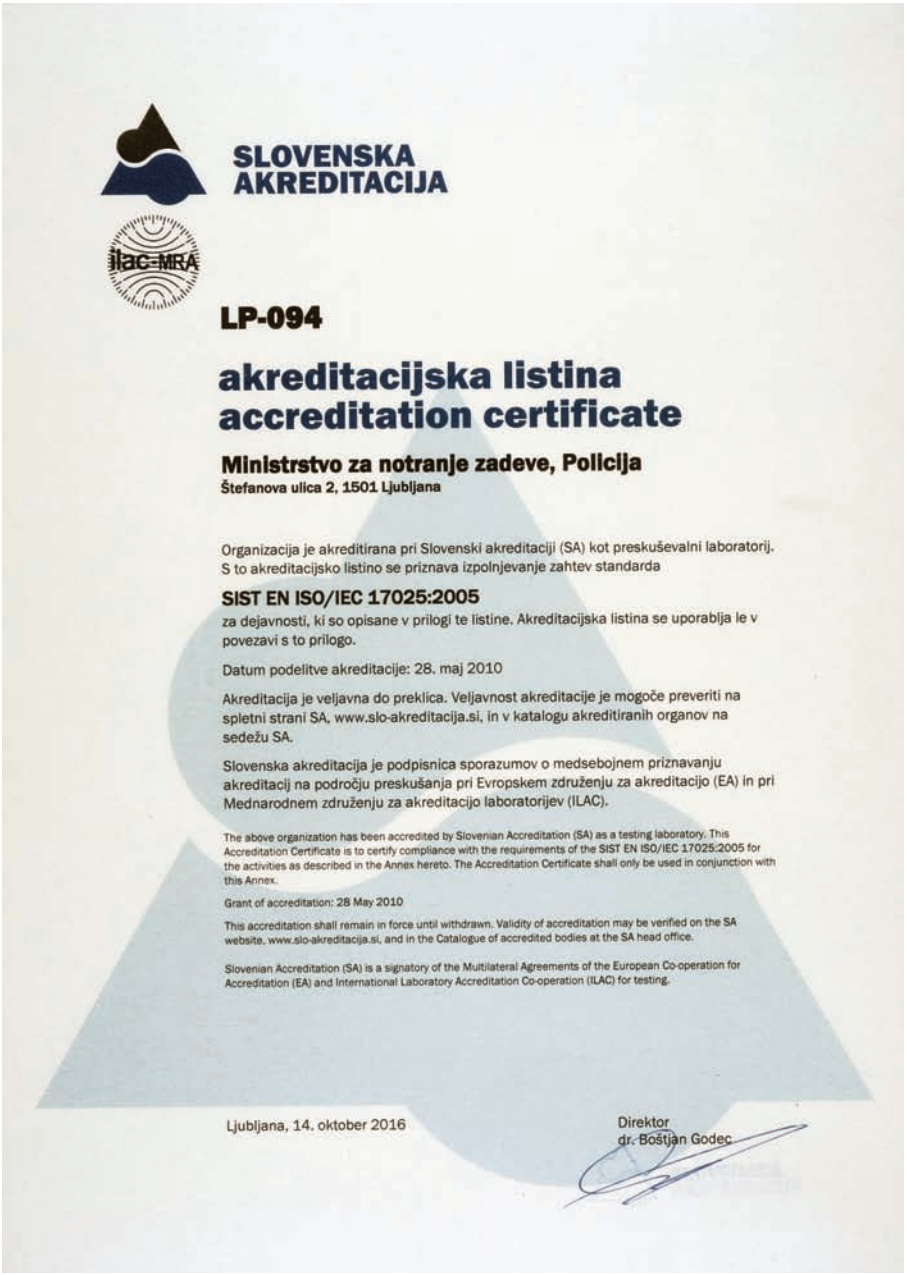
- preiskave latentnih zapisov in izboljšanje vidnosti latentnih zapisov na najrazličnejših papirnih listinah;
- preiskave črnil (nedestruktivne), štampiljk in štampiljčnih odtisov, izpisov tiskalnika ali fotokopirnega stroja in preiskave tehnik tiska;
- preiskave bankovcev (evra in drugih valut), ugotavljanje njihove pristnosti in načina izdelave ter ugotavljanje vira ponaredka;
- preiskave kovancev (evra), ugotavljanje njihove pristnosti in načina izdelave ter ugotavljanje vira ponaredka.

and ascertaining which parts of the document were changed and how.

- Examinations of indented impressions, enhancing the visibility of indented impressions on various paper documents.
- Examinations of ink (non-destructive), stamps, stamp impressions, printed matter or photocopies; examination of printing techniques.
- Examinations of banknotes (euro and other currencies), establishing their authenticity, note-making techniques, and identifying the source of the forgery.
- Examinations of coins (euro), establishing their authenticity, coining techniques, and identifying the source of the forgery.







SLOVENSKA AKREDITACIJA

ilac-MRA

LP-094

akreditacijska listina
accreditation certificate

Ministrstvo za notranje zadeve, Policija
Štefanova ulica 2, 1501 Ljubljana

Organizacija je akreditirana pri Slovenski akreditaciji (SA) kot preskuševalni laboratorij. S to akreditacijsko listino se priznava izpolnjevanje zahtev standarda

SIST EN ISO/IEC 17025:2005

za dejavnosti, ki so opisane v prilogi te listine. Akreditacijska listina se uporablja le v povezavi s to prilogo.

Datum podelitve akreditacije: 28. maj 2010

Akreditacija je veljavna do preklica. Veljavnost akreditacije je mogoče preveriti na spletni strani SA, www.slo-akreditacija.si, in v katalogu akreditiranih organov na sedežu SA.

Slovenska akreditacija je podpisnica sporazumov o medsebojnem priznavanju akreditacij na področju preskušanja pri Evropskem združenju za akreditacijo (EA) in pri Mednarodnem združenju za akreditacijo laboratorijev (ILAC).

The above organization has been accredited by Slovenian Accreditation (SA) as a testing laboratory. This Accreditation Certificate is to certify compliance with the requirements of the SIST EN ISO/IEC 17025:2005 for the activities as described in the Annex hereto. The Accreditation Certificate shall only be used in conjunction with this Annex.

Grant of accreditation: 28 May 2010

This accreditation shall remain in force until withdrawn. Validity of accreditation may be verified on the SA website, www.slo-akreditacija.si, and in the Catalogue of accredited bodies at the SA head office.

Slovenian Accreditation (SA) is a signatory of the Multilateral Agreements of the European Co-operation for Accreditation (EA) and International Laboratory Accreditation Co-operation (ILAC) for testing.

Ljubljana, 14. oktober 2016

Direktor
dr. Boštjan Godec

AKREDITACIJA

Zakaj akreditacija? Uvedbo akreditacije forenzičnih preiskav in postopkov so narekovale tako zunanje zahteve in okoliščine kot tudi notranje, organizacijske zahteve, ki si jih je postavil laboratorij sam:

- zahteva Evropske unije (2004) – akreditacija forenzičnih laboratorijev, katerih preiskave in mnenja veljajo tudi na sodišču,
- priporočilo Sveta Evrope – akreditacija državnih laboratorijev po standardu ISO 17025:2005,
- pogoj za članstvo v Evropski mreži inštitutov za forenzične znanosti in
- dokazovanje kompetentnosti z uvedbo sistema kakovosti in akreditacijo po standardu ISO 17025:2005.

Akreditacija laboratorija zagotavlja tehnično veljavnost rezultata ter dokazovanje nepristranosti in kompetentnosti osebja.

Dokazovanje in vzdrževanje kompetentnosti se zagotavljata z zunanjimi ocenjevanji, opravljanjem testov strokovnosti in medlaboratorijskimi primerjavami, ustreznimi dokumentiranimi programi usposabljanj in njihovo izvedbo.

Akreditacija za laboratorij pomeni uradno priznanje usposobljenosti za opravljanje določenih dejavnosti – izvajanje analiz za določen namen (forenzičnih preiskav), zaupanje v rezultate preizkušanja, kalibriranja, certificiranja in kontrole, mednarodna veljavnost rezultatov preizkušanja –, zmanjšuje pa tudi ne-

ACCREDITATION

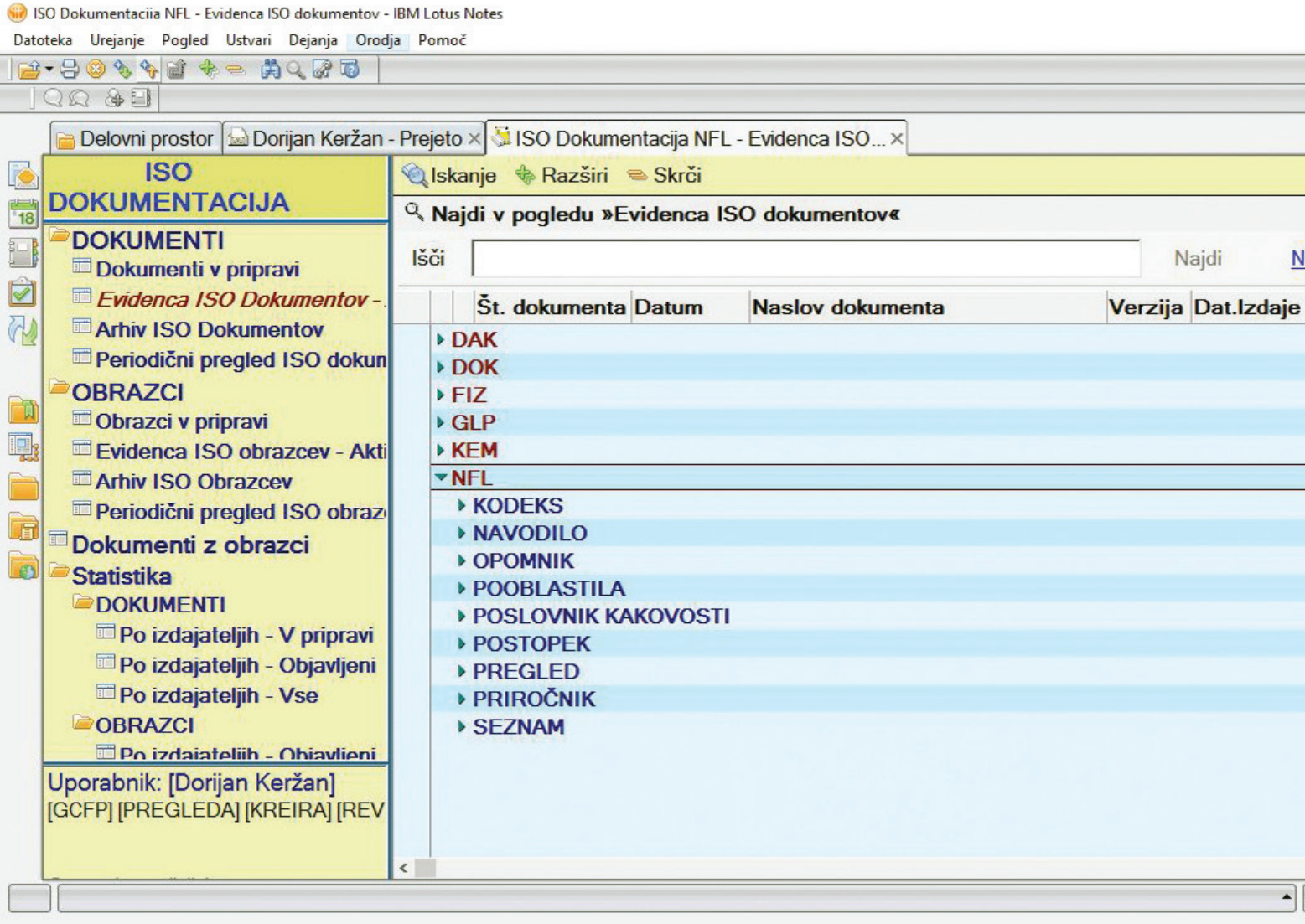
Why is accreditation important? The accreditation of forensic examinations and procedures was introduced due to external requirements and circumstances as well as internal organisational requirements imposed by the Laboratory itself:

- EU requirement (2004) – Accreditation of forensic laboratories that perform investigations and convey opinions admissible in court.
- Council Recommendation – accreditation of state laboratories in accordance with the ISO 17025:2005 standard.
- ENFSI (European Network of Forensic Science Laboratories) membership requirement
- Proof of competence with the introduction of the quality system and accreditation in accordance with the ISO 17025:2005 standard

Accreditation of the laboratory ensures the technical validity of results, proof of impartiality, and proof of personnel competence.

Validating and maintaining competence is ensured by external evaluation, taking proficiency tests, inter-laboratory comparisons, appropriate documented training programmes and their implementation.

Accreditation means that the laboratory is officially certified to perform certain tasks – carrying out analyses for certain purposes (forensic examinations), the trustworthiness of the results of examinations, calibrations, certification, and control, the


ISO Dokumentaciia NFL - Evidenca ISO dokumentov - IBM Lotus Notes
Datoteka Urejanje Pogled Ustvari Dejanja Orodja Pomoč
Delovni prostor
Dorijan Keržan - Prejeto
ISO Dokumentacija NFL - Evidenca ISO...
ISO DOKUMENTACIJA
DOKUMENTI
Dokumenti v pripravi
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Uporabnik: [Dorijan Keržan]
[GCFP] [PREGLEDA] [KREIRA] [REV
Iskanje
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POSTOPEK
PREGLED
PRIROČNIK
SEZNAM

potrebno ponavljanje postopkov in ustvarja ustrezne razmere za prost pretok blaga in storitev.

Kakovost laboratorijskih storitev v okviru akreditiranih postopkov zagotavlja točnost in zanesljivost opravljenih meritev/preiskav, dobro komunikacijo med osebjem laboratorija in naročnikom ter usposobljenost laboratorija za opravljanje določene storitve.

Akreditacija zagotavlja tudi mnogo mehanizmov za preprečevanje napak: sledljivost preiskave, neodvisno (zunanje) ocenjevanje laboratorija, notranje (lastne) presoje laboratorija, vzdrževanje, preverjanje in kalibracijo opreme, usposobljenost osebja in validacijo (vseh) metod.

Ključna prednost akreditacije je točnost rezultata, kar je osrednjega pomena za laboratorij, pri tem pa je osredotočanje na točnost rezultata hkrati tudi prizadevanje za nepristranost, saj je točen rezultat tudi nepristranski rezultat. Če laboratoriji na trgu sledijo zahtevam standarda zaradi konkurenčnosti in dobička, laboratoriji, kot je Nacionalni forenzični laboratorij, standardu sledijo zaradi dokazovanja nepristranosti.

international validity of examination results, while it also reduces the needless repetition of procedures and establishes conditions for the free movement of goods and services.

The quality of laboratory services within accredited procedures facilitates the accuracy and reliability of tests/examinations, good communication between the laboratory staff and clients, and the competence of the laboratory to provide a certain service.

Accreditation also ensures a wide range of error-prevention mechanisms: the traceability of examinations, independent (external) evaluation of the laboratory, internal assessments of the laboratory, equipment maintenance, verification and calibration, staff competency, and the validation of (all) methods.

The key advantage of accreditation is result accuracy, which is of great importance to the laboratory as an accuracy-focused approach also entails undertaking efforts to ensure impartiality – an accurate result is also an impartial result. While some laboratories on the market follow the required standards due to competitiveness and profits, laboratories such as the National Forensic Laboratory follow the standards to prove impartiality.


Flores Valles

AKREDITIRANE METODE NACIONALNEGA FORENZIČNEGA LABORATORIJA

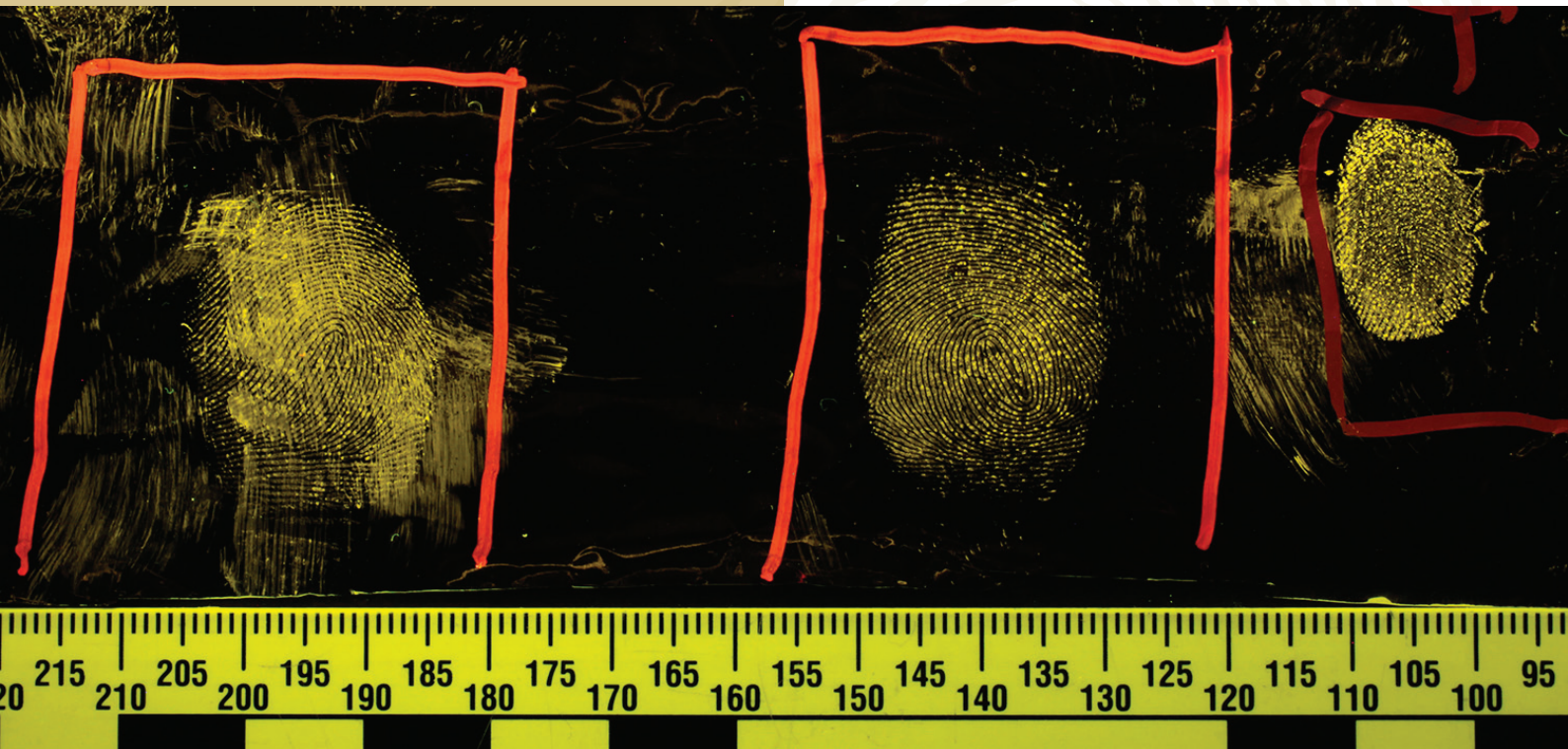
Oddelek za daktiloskopijo

1. Izzivanje sledi papilarnih linij z reagentom DFO
2. Izzivanje prstnih sledi z ninhidrinom
3. Izzivanje prstnih sledi s cianoakrilatnimi estri
4. Primerjava prstnih sledi in prstnih odtisov

ACCREDITED METHODS OF THE NATIONAL FORENSIC LABORATORY:

Dactyloscopy Section

1. Fingerprint development with DFO process
2. Fingerprint development with Ninhydrin process
3. Fingerprint development with Cyanoacrylate process
4. Comparison of fingerprints



De rojak
Prost bo vsák,
Ne vrág, le sósad bo mejak.

Oddelek za preiskave dokumentov NAC/CNAC

5. Metoda preiskave rokopisa
6. Metoda preiskave podpisa
7. Metoda preiskave dokumentov na podlagi naslednjih tehnik in parametrov:
   - nedestruktivne preiskave papirja (preverjanje vizualnih lastnosti papirja v vidni svetlobi in z različnimi svetlobnimi viri – UV-, IR-absorbcija in refleksija, IR-luminiscenca, stranska osvetlitev in presvetlitev), preverjanje zaščitnih elementov varnostnega papirja, potiska in fizičnih lastnosti (raztrganin, prepogibanj ali sledi orodja – rezanja, žlebljenja, perforiranja itd.) ter primerjave navedenih lastnosti;
   - NIR-absorpcija in refleksija pri preiskavah dokumentov (primerjava značilnosti črnil in barv, ugotavljanje dodanih elementov, pregled sledi mehanskega in kemičnega brisanja podatkov ter pregled zaščitnih elementov);
   - preiskava tipkopisov (ugotavljanje, ali je zapis tipkopis, in določanje osnovnih značilnosti pisalnih strojev (mehanski, električni), preverjanje enotnosti zapisa, ugotavljanje individualnih značilnosti tipkopisa in branje vsebine s traku);
   - preiskave križanja linij (križanje tekočih črnil, ki se slabo vpijajo v papir, s črnili, ki se ne vpijajo (na primer kemični svinčnik s tonerjem ali zapisom električnega pisalnega stroja));
   - preiskave latentnih sledi (v stranski svetlobi in z elektrostatskim izzivanjem);
   - preiskave štampiljk in štampiljčnih odtisov (ugotavljanje, ali je odtis odtisnjen s štampilj-

Document Examination Section NAC/CNAC

5. Handwriting examination guideline
6. Signature examination guideline
7. Examination of questioned documents based on the following techniques and parameters:
   - Non-destructive examinations of paper (verifying the visual properties of paper in visible light and with different light sources (UV, IR absorption and reflection, IR luminiscence, oblique light, transmitted light), verifying the security features of security paper, verifying the printed lines, verifying the physical properties (lacerations, signs of bending or traces of tools – cutting, gutting, perforating, etc.), comparison of these characteristics
   - NIR absorption and reflection examination of documents (comparison of ink and color characteristics, detection of added elements, examination of traces of mechanical or chemical erasures, overview of security elements)
   - Examination of typewritten entries (determining whether the document is typewritten and the determination of the basic characteristics of typewriters (mechanical, electrical), verifying the unity of the document, determining the individual characteristics of the typewritten document, reading the contents from the tape)
   - Examinatio of intersecting lines (line crossings of liquid inks that are poorly absorbed in non-absorbent paper (e. g., a chemical pen with toner or a record o an electric typewriter))
   - Examinations of intented impressions (in oblique light and with electrostatic detection)

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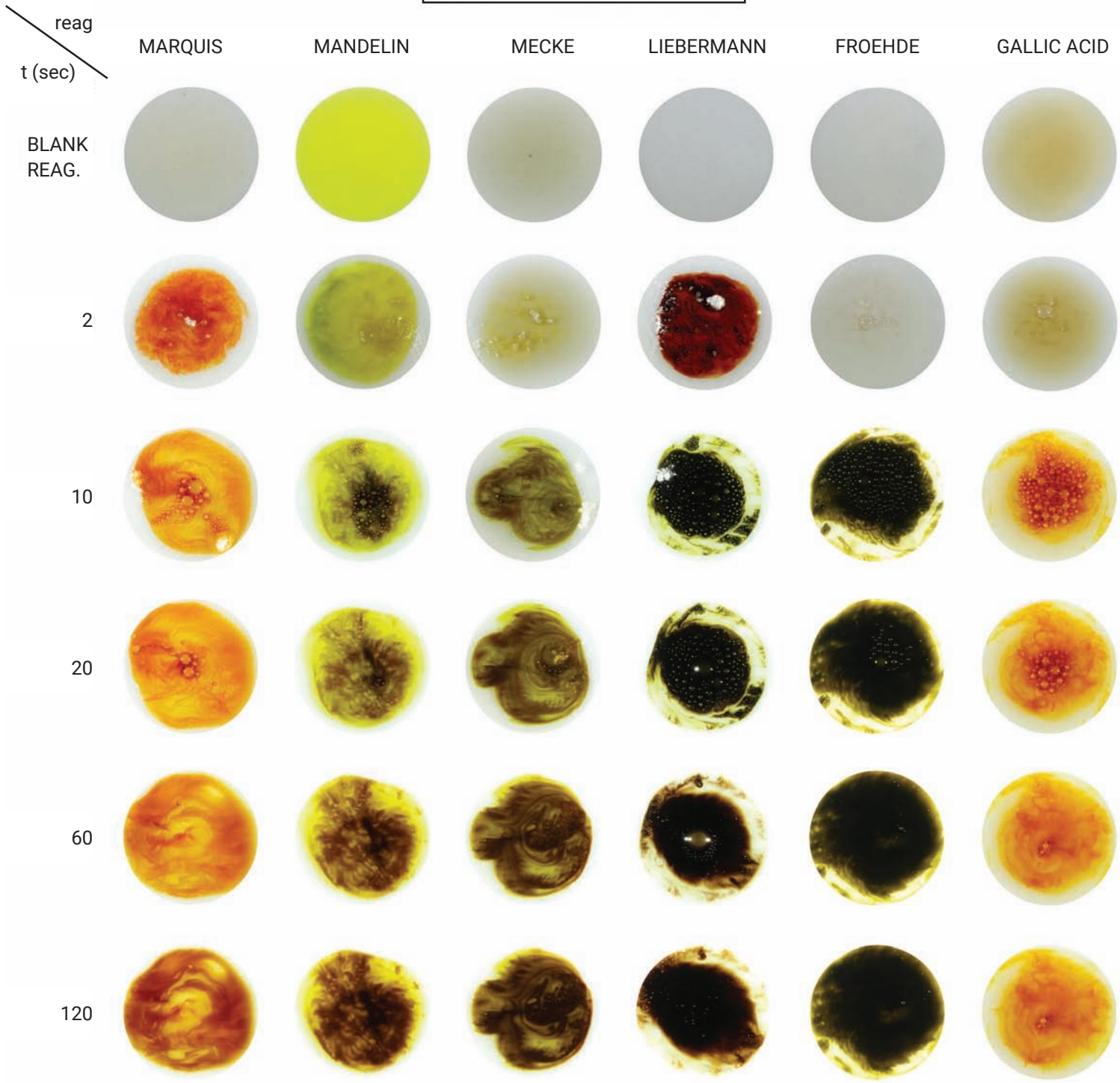
ko, primerjava splošnih in individualnih značilnosti štampiljke);

- prepoznavanje tehnik tiska (vizualni pregled, mikroskopska preiskava, pregled z različnimi osvetlitvami);
- izzivanje luminiscence pri preiskavah dokumentov (z UV-svetlobo in vidno svetlobo (NIR-luminiscenca) za primerjave značilnosti papirja, zaščitnih barv, črnil in drugih barv, štampiljčnih odtisov ter zbrisanih ali zbledelih elementov dokumenta);
- preiskave spremenjene vsebine dokumentov (iskanje spremenjenih, dodanih, prekritih in brisanih zapisov ter razbiranje prvotnega zapisa);
- magnetne lastnosti tiskovin (ugotavljanje prisotnosti zaščitnih elementov ali enotnosti tonerja pri izpisih laserskih tiskalnikov z vizualizacijo);
- preiskave izpisov brizgalnih tiskalnikov (na podlagi sledi, ki nastanejo pri prehajanju papirja skozi tiskalnik, barve črnila, smeri tiskanja in napak).

- Examination of stamps and stamp impressions (determining whether the impression is stamped with stamp, comparison of the general and individual characteristics of the impressions, determining the characteristics of the stamp)
- Recognition of printing techniques (visual inspection, microscopic examination, examination with different illuminations)
- Application of luminiscence to the examination of documents (with UV and visible light (NIR luminiscence) for comparison of the characteristics of paper, security colors and inks, stamp impressions, erased and faded elements of the document)
- Examination of alterations (searching for changed, added, overlapeped and erased parts of document, and retrieving the original entry)
- Examination of magnetic properties (determination of the presence of security elements, verifying uniformity of toner in prints of laser printers with visualization)
- Examination of inkjet printed documents (comparison of printed documents based on traces made by printerr mechanical features or dirt, color of inks, print directions and errors

N-methyl-2AI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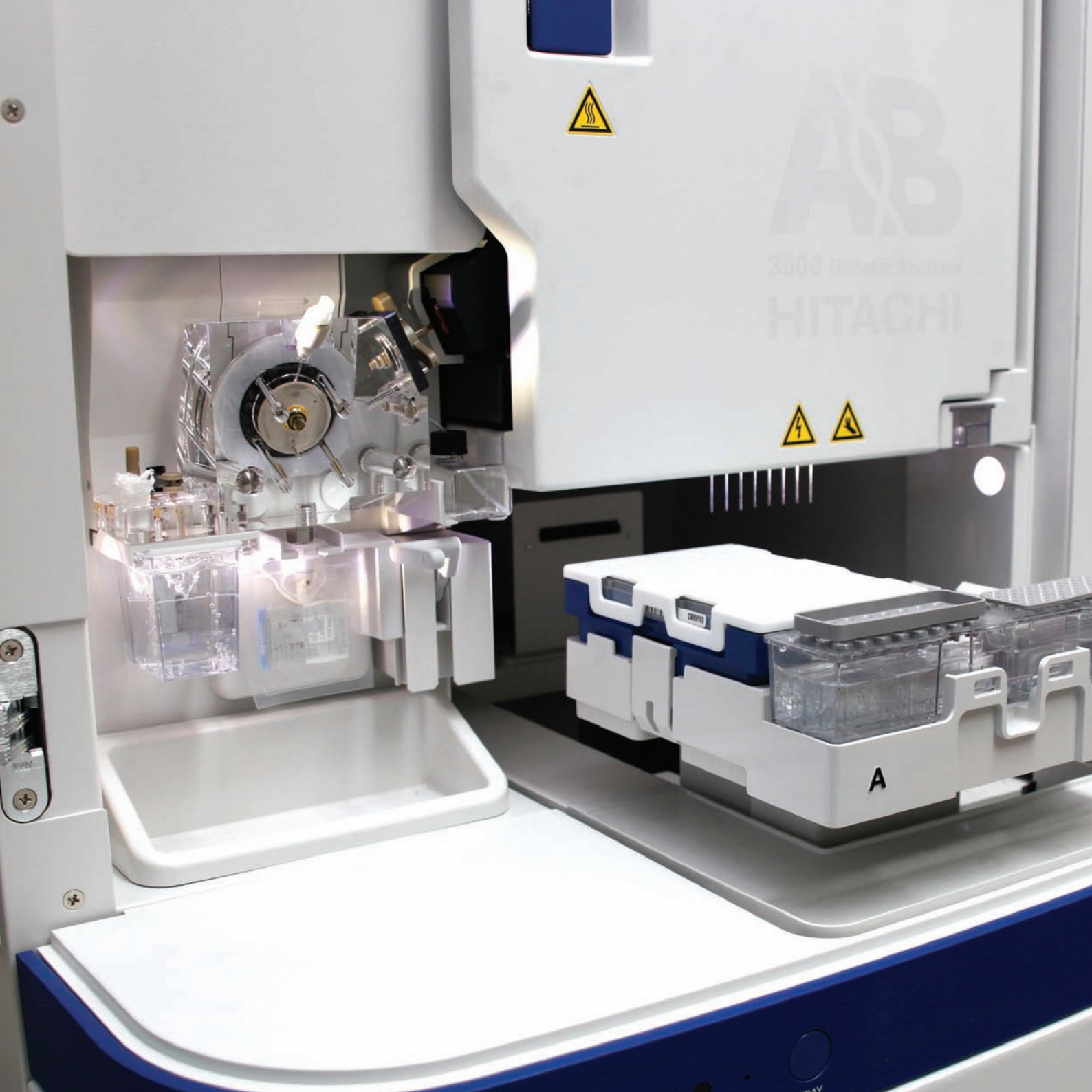
Oddelek za kemijske preiskave

8. Preliminarni test na kokain s kobaltovim tiocianatom
9. Preliminarni test na alkaloide z Betrandovim reagentom
10. Preliminarni test na opijate in fenetilamine z Marquisovim reagentom
11. Preliminarni test na triptamine z Erlichovim reagentom
12. Preliminarno testiranje prepovedanih drog
13. Identifikacija rastline konoplje in njenih produktov z GC-MS
14. Kvantitativno določanje heroina z GC-MS – metoda z izotopsko označenim internim standardom heroina
15. Analiza požarnih ostankov in hlapov vnetljivih snovi z metodo SPME – GC-MS
16. Analiza vnetljivih tekočin z metodo GC-MS
17. Identifikacija neznanih drog, njihovih stranskih produktov in primesi z metodo CG-MS
18. Pregled, opis, tehtanje in vzorčenje prepovedanih drog

Chemical Examination Section

8. Preliminary test on cocaine with cobalt thiocyanate
9. Preliminary test on alkaloids with Bertrand's reagent
10. Preliminary test on opiates and phenethylamines with Marquis reagent
11. Preliminary test on tryptamines with Ehrlich's reagent
12. Preliminary test on illicit drugs
13. Identification of cannabis plant and its products by the GC-MS
14. Quantification of heroin by GS-MS - method by isotopically labelled heroin as internal standard
15. Analysis of fire debris samples and vapour from mignitable substances using the SPME – GC-MS
16. Analysis of flammable liqiuids by GC-MS method
17. Identification of general unknown drugs, its by-products and admixes by GC-MS
18. Inspection, description, weighting and sampling of illicit drug samples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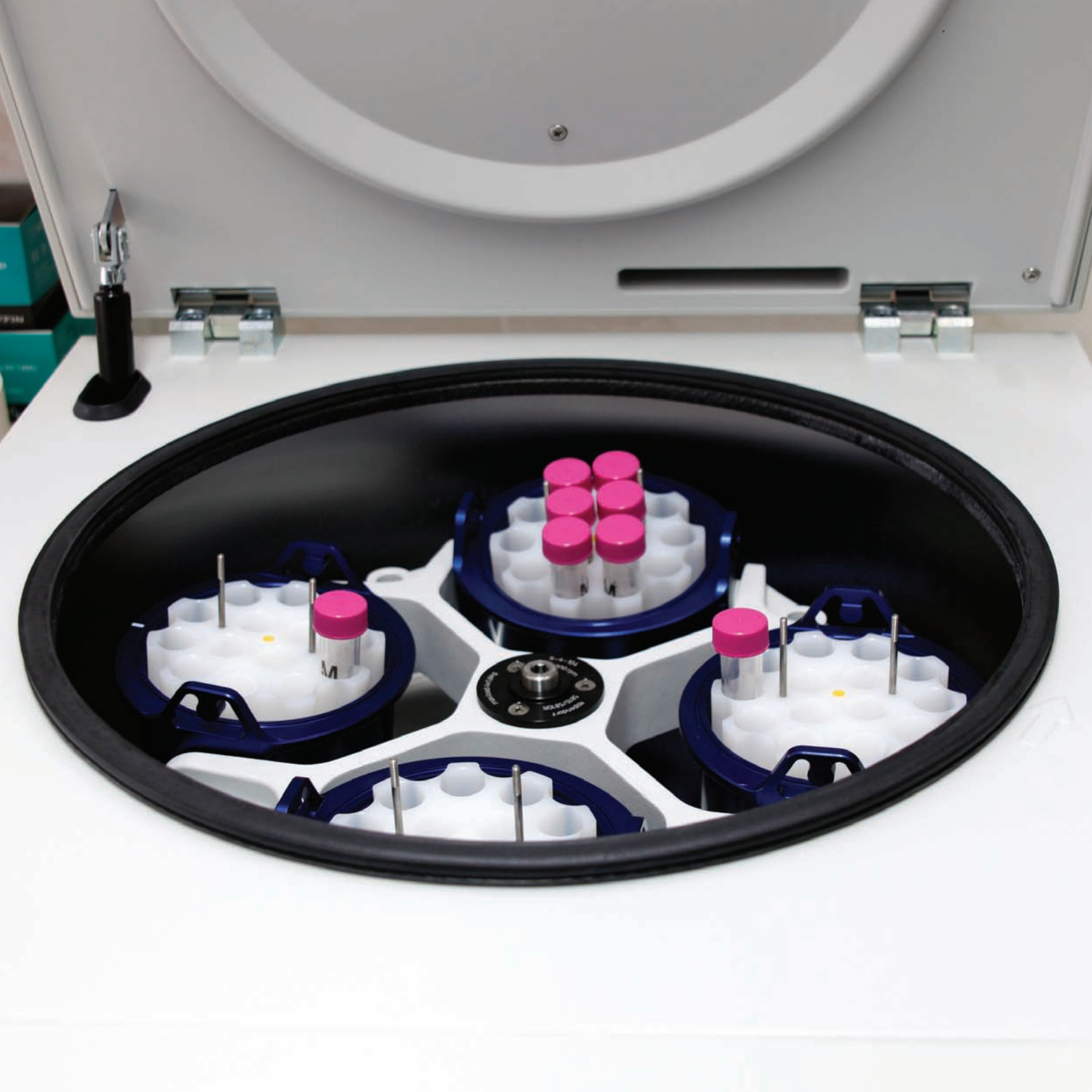
Oddelek za biološke preiskave

19. Ugotavljanje identitete osebe z analizo lokusov STR in amelogeninskega gena
    - Priprava vzorcev
        - predpriprava in čiščenje kosti ali zob
        - mletje kosti ali zob
        - izrezovanje celic z lasersko mikrodisekcijo
        - priprava vzorcev za določanje koncentracije in pomnoževanje z napravo Qiagility
        - priprava vzorcev za določanje koncentracije in pomnoževanje z robotskim sistemom Janus
    - Izolacija DNK
        - izolacija DNK z metodo Chelex
        - izolacija DNK z organsko metodo
        - izolacija DNK s kompletom QIAamp Investigator Kit
        - izolacija DNK iz kosti ali zob
        - avtomatska izolacija DNK z napravo EZ1®ADVANCED XL
    - PCR v realnem času
        - določanje koncentracije DNK z napravo ABI 7500 in kompletom Quantifiler® Trio DNA
    - Pomnoževanje DNK (PCR)
        - pomnoževanje DNK s kompletom AmpFISTR® NGMTM
        - pomnoževanje DNK s kompletom AmpFISTR® NGMTM SElect Express
    - Kapilarna elektroforeza
        - ločevanje in detekcija fragmentov DNK z genetskim analizatorjem ABI 3500

Biological Examination Section

19. Analysis of STRs and amelogenin gene for human identity testing
    - Sample preparations
        - pretratment and cleaning of bones and teeth
        - grinding of bones and teeth
        - dissection of cells with laser microdissection
        - PCR reaction setups, dilution, normalization with benchtop instrument Qiagility
        - PCR reaction setups, dilution, normalization with automated workstation Janus
    - DNA isolation
        - DNA isolation using Chelex method
        - Isolation using organic method
        - DNA isolation using QIAamp DNA Investigator Kit
        - DNA isolation from bones and teeth
        - automated isolation of DNA using EZ1®ADVANCED XL instrument
    - Real-time PCR
        - quantification of DNA using Quantifiler® Trio DNA by ABI 7500 Real -_time PCR System
    - DNA amplification (PCR)
        - DNA amplification using AmpFISTR® NGMTM kit
        - DNA amplification using AmpFISTR® NGMTM SElect Express kit
    - Capillary electrophoresis
        - Separation and detection of DNA fragments using genetic analyzer ABI 3500



- Analiza DNK
  - analiza pomnoženih fragmentov DNK s programom GeneMapper ID-X

20. Identifikacijski testi za ugotavljanje serološkega izvora bioloških sledi na podlagi naslednjih tehnik in parametrov:
    - kemijski test za ugotavljanje krvi na podlagi hemoglobina;
    - imunokromatografski test za ugotavljanje človeške krvi na osnovi protiteles proti človeškemu hemoglobinu;
    - barvni kemijski test za ugotavljanje semenske tekočine na osnovi kisle fosfataze;
    - imunokromatografski test za ugotavljanje semenske tekočine humanega izvora na osnovi protiteles;
    - barvni kemijski test za ugotavljanje sline na osnovi alfa amilaze;
    - imunokromatografski test za ugotavljanje RSID sline.

- DNA analysis
  - Analysis of results of amplified DNA fragments using GeneMapper ID-X software

20. Identification of biological fluids and stains by following techniques and parameters
    - chemical test for identification of blood based on haemoglobin;
    - immunochromatographic test for identification of human blood based on antibodies against Hb;
    - chemical test for identification of semen based on an acid phospotase;
    - immunochromatographic test for identification of human semen based on antibodies;
    - enzymatic test of saliva based on alpha amylase;
    - immunochromatographic test for RSID saliva.

Oddelek za fizikalne preiskave

21. Analiza delčkov po streljanju s SEM-EDX
22. Primerjava sledi obuval
23. Preiskava tekstilnih vlaken:
    - preliminarna preiskava na osnovi naslednjih tehnik in parametrov:
        - izločitev tistih tekstilnih vlaken iz vzorca spornih kontaktnih mikrosledi, ki se po najočitnejših morfoloških značilnostih (barva, konfiguracija v prostoru), vidnih z uporabo stereomikroskopa, ne razlikujejo od primerjalnih tekstilnih vlaken;
    - primerjalna preiskava na osnovi naslednjih tehnik in parametrov:
        - ugotavljanje enakosti morfoloških značilnosti spornih in primerjalnih tekstilnih vlaken z uporabo primerjalnega mikroskopa;
    - UV-VIS mikroskopska spektrofotometrija na osnovi naslednjih tehnik in parametrov:
        - spremljanje vrednosti transmitance (% T) ali absorbance (AU) v odvisnosti od dolžine v definiranem območju od 240 do 760 nm. Rezultat meritve je v obliki UV-VIS spektra.
24. Balistične preiskave izstrelkov
25. Mikroskopske balistične preiskave

Physical Examination Section

21. GSR analysis by SEM-EDX
22. Comparison of footwear marks
23. Examination of textile fibres
    - Preliminary examination by following techniques and parameters:
        - Elimination of recovered textile fibres (according to the knowm sample) by means of the most obvious morphological characteristics (colour, spatial configuration) that can be seen using lo power microscopy;
    - Comparison examination by following techniques and parameters:
        - Determination of morphological equality of recovered and known fibre sample using comparison microscopy;
    - UV-VIS microscopic spectrophotometry by following techniques and parameters:
        - Detection of transmittance (%T) or absorbance (AU) values in dependence of wavelength in defined range between 240 nm and 760 nm. Result of the measurement is UV-VIS spectra.
24. Balistic examination of projectiles
25. Microscopic balistic examination

ENFSI

EUROPEAN NETWORK
OF FORENSIC SCIENCE
INSTITUTES

NACIONALNI FORENZIČNI LABORATORIJ IN EVROPSKA MREŽA INŠTITUTOV ZA FORENZIČNE ZNANOSTI

Nacionalni forenzični laboratorij je ustanovni član Evropske mreže inštitutov za forenzične znanosti in njen član vse od leta 1995. Mreža ima danes 72 članov iz 39 držav članic Sveta Evrope. Največ laboratorijev, deset, je iz Nemčije, iz Združenega kraljestva jih je šest, pet jih je iz Španije in tako naprej. Delo združenja je organizirano v 17 delovnih skupinah, glede na preiskave, ki jih opravlja, pa Nacionalni forenzični laboratorij aktivno sodeluje v 13 delovnih skupinah, in sicer v:

- delovni skupini za ponarejene dokumente (EDEWG),
- delovni skupini za rokopise (ENFHEX),
- delovni skupini za vlakna in lase (ETHG),
- delovni skupini za humano DNK (DNA WG),
- delovni skupini za prstne odtise (EFP WG),
- delovni skupini z prepovedane droge (Drugs WG),
- delovni skupini za eksploziv (FINEX),
- delovni skupini za požare in eksplozije (FEIWG),
- delovni skupini za barve in lake (EPGWG),
- delovni skupini za orožje in sledi z rok strelca (Firearms /GSR WG),
- delovni skupini za sledi orodja in obuval (Marks WG),
- delovni skupini za digitalno sliko (DI WG) in
- delovni skupini za kraj ogleda (SoC WG).

NATIONAL FORENSIC LABORATORY AND EUROPEAN NETWORK OF FORENSIC SCIENCE INSTITUTES ENFSI

The National Forensic Laboratory is one of the founding members of the European Network of Forensic Science Institutes and has been a member since 1995. Today, ENFSI has 72 members from 39 Council of Europe member states. Germany has the most member laboratories with 10, followed by the UK with six, Spain with five, etc. The ENFSI's work is organised within 17 working groups, divided according to the examinations they carry out. The National Forensic Laboratory is active in 13 working groups:

- European Document experts working group (EDEWG),
- European Network of Forensic Handwriting Examiners (ENFHEX),
- ENFSI Textile anfd Hair Group (ETHG),
- ENFSI DNA Working Group (DNAWG),
- European Fingerprint Working Group (EFPWG),
- Drugs Working group (DWG),
- Forensic International Network for Explosives Investigation (FINEX)
- Fire and Explosions Working Group (FEIWG)
- European Paint & Glass Working Group (EPGWG)
- ENFSI Working Group Firearms/GSR (Firearms/GSR WG)
- Marks Working Group (Marks WG)
- Digital mImaging Working Group (DIWG) and
- Scene of Crime Working Group (SoCWG)

11th ENFHEX CONFERENCE AND BUSINESS MEETING 2017

Bled, Slovenia, 4th – 6th October 2017

Poleg tega je aktiven tudi v povezovalni skupini za kakovost in kompetence (QCLG), ki je širše posvetovalno telo komiteja evropske mreže za kakovost in kompetence (QCC).

Laboratorij ne sodeluje v štirih delovnih skupinah, katerih dejavnosti ne opravlja ali jih opravlja le v zelo omejenem obsegu. Te skupine so:

- delovna skupina za biološke sledi, ki ne izhajajo iz človeka, in sledi zemlje (APST WG),
- delovna skupina za forenziko informacijske tehnologije (FIT WG),
- delovna skupina za forenzične preiskave govora in zvoka (FSAA WG) in
- delovna skupina za preiskave prometnih nesreče (RAA WG).

Nacionalni forenzični laboratorij je eden izmed najaktivnejših in najbolj spoštovanih članov Evropske mreže inštitutov za forenzične znanosti, saj so njegovi strokovnjaki sodelovali ali še sodelujejo pri vodenju delovnih skupin za prepovedane droge, sledi orodja in obuval ter delovne skupine za vlakna in lase. Dva mandata so sodelovali tudi v Upravnem odboru mreže (ENFSI Board) in en mandat v danes že razpuščenem stalnem komiteju za Evropsko akademijo forenzičnih znanosti (EAFS SC).

Nacionalni forenzični laboratorij je organiziral tudi več strokovnih konferenc delovnih skupin Evropske mreže inštitutov za forenzične znanosti na Bledu:

- konferenca delovne skupine za tekstilije in lase (ETHG) leta 2005,
- konferenca delovne skupine za preiskave DNK (DNA WG) leta 2005,

In addition, the National Forensic Laboratory is also active in the Quality & Competence Liaison Group (QCLG), which acts as the consulting body of the ENFSI's Quality and Competence Committee (QCC).

The Laboratory is not an active participant in four working groups whose activities are not carried out by the laboratory or are performed in a limited scope. Working Groups:

- Animal, Plant and Soil Traces working Group (APST),
- Forensic Information Technology Working Group(FITWG),
- Forensic Speach and Audio Analysis Working Group (FSAAWG), and
- Road Accident Analysis Working Group (RAAWG).

The National Forensic Laboratory is one of the most active and well-respected members of ENFSI as its experts have been or still are involved in the management of working groups for illicit drugs, tool and footwear traces, and the working group for textiles and hair. For two terms of office the National Forensic Laboratory's experts were also active on the ENFSI Board and had one term of office in the European Academy of Forensic Science Standing Committee (EAFS SC), which has already been dissolved.

The National Forensic Laboratory has also organised multiple expert conferences of ENFSI working groups in Bled:

- ENFSI Textile anfd Hair Group (ETHG) conference in 2005,
- ENFSI DNA Working Group (DNAWG) conference in 2005,

- konferenca delovne skupine za prepovedane droge (DWG) leta 2010,
- konferenca delovne skupine za sledi orodja in obuvala (Marks WG) leta 2013,
- konferenca delovne skupine za prepovedane droge (DWG) leta 2016,
- konferenca delovne skupine za preiskave rokopisov (ENFHEX) leta 2017,
- konferenca delovne skupine za kakovost in kompetence (QCLG) leta 2017 in
- konferenca delovne skupine za digitalno sliko (DIWG) leta 2018.

Organizirali so tudi dva sestanka Upravnega odbora mreže v Ljubljani in sestanek komiteja za Evropsko akademijo forenzičnih znanosti, ki je prav tako potekal v Ljubljani.

- Drugs Working group (DWG) conference in 2010,
- Marks Working Group (Marks WG) conference in 2013,
- Drugs Working group (DWG) conference in 2016,
- European Network of Forensic Handwriting Examiners (ENFHEX) conference in 2017,
- Quality & Competence Liaison Group (QCLG) conference in 2017, and
- Digital Imaging Working Group Conference (DIWG) in 2018.

It has also organised two meetings of the ENFSI Board in Ljubljana and a meeting of the European Academy of Forensic Science's Standing Committee (EAFS SC) also in Ljubljana.

»ENFSI BOARD MEETING«

March 21th – 22th 2017, National Forensic Laboratory

NACIONALNI FORENZIČNI LABORATORIJ DANES IN V PRIHODNOSTI

Nacionalni forenzični laboratorij za policijo in pravosodje opravlja preiskave materialnih sledi s krajev kaznivih dejanj z namenom identifikacije, klasifikacije in individualizacije sledi. Sodeluje pri ogledih kaznivih dejanj, nesreč in dogodkov ter pri hišnih preiskavah in vodi postopke ugotavljanja identitete oseb. Laboratorij je skrbnik forenzičnih evidenc in upravlja vrsto zbirk sledi in primerjalnih vzorcev. Je nosilec kakovosti in razvoja forenzičnih preiskav ter pripravlja in izvaja programe zagotavljanja kakovosti pri ogledih in preiskavah, še zlasti pa usposablja kriminalistične tehnike (nosilce ogleda kraja) in policiste za opravljanje ogleda kot prvega dela forenzičnega procesa. Končni izdelek forenzičnega procesa so poročila o preiskavah in podaja mnenj oziroma interpretacije rezultatov, ki so sestavni del ovadbe, tožilec pa jih priloži obtožnici kot dokaz.

Strokovnjaki Nacionalnega forenzičnega laboratorija redno pripravljajo prispevke za konference delovnih skupin in objavljajo strokovne članke v tujih in domačih strokovnih publikacijah.

Danes ima Nacionalni forenzični laboratorij 76 sistemiziranih delovnih mest in 72 zaposlenih, večina izmed njih na znanstvenih delovnih mestih. Za vsaj 59 delovnih mest je zahtevana najmanj visoka izobrazba oziroma prva bolonjska stopnja, dejansko pa pregled izobrazbene strukture zaposlenih pokaže, da ima:

THE NATIONAL FORENSIC LABORATORY TODAY AND IN THE FUTURE

The National Forensic Laboratory performs examinations of trace material from crime scenes in order to identify, classify and individualise traces for the police and the Ministry of Justice. It also participates in inspections of crime scenes, accidents and other incidents, and in home searches; it is also in charge of procedures for the identification of persons. The laboratory keeps forensic records and manages various databases of traces and comparison samples. It is responsible for the quality and development of forensic examinations, and prepares and implements quality assurance programmes in inspections and examinations. Above all, it trains forensic technicians (crime scene investigators) and police officers to carry out scene inspections as the first part of the forensic process. The end product of the forensic process are reports on investigations and opinions and the interpretation of results that constitute the component part of criminal complaints that are submitted by the prosecutor as evidence along with the indictment.

The National Forensic Laboratory's experts prepare their contributions for working group conferences and publish scientific articles in national and international scientific publications on a regular basis.

Today, there are 76 classified work posts and 72 employees, most of whom have a scientific post. For at least 59 work posts, higher education or a first cycle

- 11 zaposlenih končano podiplomsko izobraževanje (doktorat (deset) ali znanstveni magisterij (eden)),
- 31 zaposlenih univerzitetno izobrazbo (ali bolonjski magisterij),
- 17 zaposlenih visoko strokovno šolo (ali prvo bolonjsko stopnjo) in
- 13 zaposlenih srednješolsko izobrazbo (tehniki in administrativni delavci).

V zadnjih sedemdesetih letih sta kriminalistična tehnika in forenzika podobno kot drugod po svetu doživeli veliko sprememb in preobrazb. Če so v petdesetih letih prevladovale preiskave rokopisov, ki jih je bilo v posameznih letih tudi več kot polovica vseh preiskav, bioloških analiz pa skoraj ni bilo, in so v sedemdesetih prevladovale daktiloskopske preiskave, je danes povsem drugače. S hitrim razvojem preiskav humane DNK, ki so danes ključni element dokazovanja identitete storilca ali žrtve kaznivega dejanja, število tovrstnih preiskav v zadnjih letih zajema okoli 40 odstotkov vseh preiskav laboratorija. Preiskave rokopisov, ki so bile v preteklosti najpogostejše, danes obsegajo le en odstotek vseh preiskav. Preiskave prepovedanih drog in drugih snovi ter daktiloskopske preiskave so v zadnjih letih količinsko ne spreminjajo, medtem ko so preiskave ponarejenega denarja količinsko najbolj spremenljive. Nekatere preiskave, kot so preiskave avtomobilskih pnevmatik in žarnic, počasi izginjajo, čedalje pogostejše pa postajajo preiskave videoposnetkov in digitalnih slik.

Ti trendi nakazujejo tudi spremembe v prihodnosti, ko bo čedalje večja natančnost uporabljenih instrumentov omogočala še natančnejše preiskave, ki se bodo morebiti z miniaturizacijo instrumentov opra-

Bologna degree is required, while an actual overview of the educational structure of the employees shows:

- 11 employees with a postgraduate education (10 with PhDs and one with an MSc.)
- 31 with a university degree (or second cycle Bologna degree)
- 17 with a higher vocational school degree (or a first cycle Bologna degree) and
- 13 with a high school education (technicians and administrative employees).

Similar to developments around the globe, forensic methods and forensic science in Slovenia have undergone a great deal of change and reform over the last 70 years. While manuscript examinations prevailed in the 1950s, sometimes accounting for more than half of all examinations, along with practically no biological analyses, and dactyloscopic examinations prevailed in the 1970s, the situation today is completely different. The rapid development of the field of human DNA examination, which nowadays is a key component in determining the perpetrator's or victim's identity, means that, in recent years, such examinations have accounted for about 40% of all examinations carried out by the forensic laboratory. Manuscript examinations, which were the most common in the past, account for only about 1% of all examinations today. In recent years, the number of examinations of both illicit drugs and other substances and fingerprints has been the most stable, while the number of counterfeit currency examinations has been the most volatile. Some examinations, such as examinations of tyres and car lamps, are slowly disappearing, while some, namely, examinations of video recordings and digital photos, are becoming more frequent.

vljale že na kraju dejanja. Čedalje pogosteje se pri interpretaciji rezultatov analiz uporabljajo statistične metode, nove raziskave pa kažejo na možnost interpretacije na ravni dejavnosti oziroma ugotavljanja, s katero dejavnostjo je posamezna sled nastala. Biometrične metode in v zvezi z njimi hiter razvoj računalniških aplikacij, veliko podatkov je in umetna inteligenca so izzivi, ki čedalje hitreje trkajo na vrata forenzičnih laboratorijev. Vse to pomeni, da so pred Nacionalnim forenzičnim laboratorijem zelo zanimivi in zahtevni časi, a to so izzivi, na katere je laboratorij pripravljen, zato se lahko veselimo prihodnosti enega izmed temeljnih elementov varnosti in pravičnosti v Republiki Sloveniji.

These trends also point to changes in the future, when the ever-increasing accuracy of instruments will facilitate more accurate examinations, which may be carried out on the spot due to the miniaturisation of equipment. Statistical methods are becoming more common in the interpretation of results, while new examinations show the promise of being able to draw conclusions on the activity level, which means that it will be possible to establish with which activity a certain trace was created. Biometric methods and the rapid development of computer applications associated therewith, big data, and artificial intelligence are future challenges forensic laboratories will have to face. It all means that very exciting but also difficult times are ahead of the National Forensic Laboratory, but the laboratory is ready to face these challenges, and we, therefore, look forward to a bright future as of one of the cornerstones of safety and justice in the Republic of Slovenia.

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