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20 years of accreditation of the Central Forensic Laboratory of the Police

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Abstract

This paper outlines the history of the quality management system at the Central Forensic Laboratory of the Police (CLKP), spanning more than twenty years, and the process of improving the quality management system in accordance with the requirements of PN-EN ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories* and PN-EN ISO 9001 *Quality management systems-Requirements*. It describes the successive stages of implementation of quality standards – from the initial preparatory work and staff training, to the development of system documentation, to the attainment and maintenance of certification. The text highlights the importance of international cooperation within the European Network of Forensic Science Institutes (ENFSI), participation in proficiency testing, and ongoing adaptation to new editions of the standards. The paper also highlights the responsibilities of the management, the roles and competencies of the staff, and continuous improvement as key factors in ensuring quality in the laboratory. Looking back over the system's twenty years of operation, the author concludes that the implementation of quality management principles at CLKP has enhanced the reliability of examinations, standardised the examination procedures and methods, and strengthened the position of forensic examination both nationally and internationally.

Keywords: quality management system, accreditation, certification, quality manual, procedures, audit

Standards implementation process

Twenty years of the accreditation of the Central Forensic Laboratory of the Police is not only an opportunity to take stock of its achievements, but also a time to reflect on the process of change that has led to the attainment and maintenance of its status as an organisation meeting international quality standards.

What seemed impossible before 2005 and brought a smile to one's face has now come true and become an integral part of our laboratory's day-to-day operations – management through quality. Although this term is reserved for the requirements of the ISO 9000 series of standards, it is also frequently used in the context of technical standards relating to accreditation; more specifically, in the case of CLKP, in relation to ISO/IEC 17025.

This paper outlines CLKP's journey from the initial preparatory work for quality management system certification, to the implementation of the ISO 9001 and ISO/IEC 17025 requirements and the accreditation of selected methods, to the twenty years of experience in improving the testing and organisational processes.

When looking back to 2005, the year that CLKP was accredited, it is important not to forget all the work that went into it. The process began 25 years ago, when the unit started preparing for certification of its quality management system in accordance with the requirements of the ISO 9001 standard. To this end, a Quality Team was set up, comprising police officers serving at CLKP, whose primary task was to coordinate the work on drafting documentation on how the laboratory operates, and to organise a series of external training sessions tailored to specific target groups. Training sessions were therefore held for the senior management in

quality management systems, with particular emphasis on the requirements of ISO 9001 "Quality management systems. Requirements" and ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories". They were accompanied by training for middle management in the fundamentals of quality management systems, with particular emphasis on the aforementioned standards, as well as training in the drafting the system documentation (i.e. quality manuals and system procedures).

The unit was described in terms of the processes taking place within it, ultimately taking the form of a quality manual containing system procedures and numerous appendices. These were intended to detail and clarify the procedures to be followed in specific areas of the laboratory's operations. The first edition of the system documentation was largely written verbatim, citing the requirements of standards or industry publications. It introduced unnecessary and contrived solutions, as well as overly detailed process descriptions, which to some extent made the work more difficult. This issue was resolved in subsequent editions of the Manual – the fundamental principle adopted was to draw on existing, up-to-date solutions and to include only the necessary provisions that meet the requirements of the standard.

Looking back over the past 25 years, it can be said that the documentation describing the quality management system at CLKP was largely based on accumulated knowledge that had previously been applied as best practice, constituted an informal set of rules agreed upon in contracts, or formalised in binding legal acts. The tasks carried out by individual staff members were organised into a logical whole, beginning with the definition of the requirements for themselves and the client, and ending with verification whether the laboratory succeeded in meeting the previously set objectives, expectations and, above all, the requirements of the standard.

The first stage in the verification of the described quality management system in operation at CLKP was the certification of the unit for compliance with the requirements of ISO 9001, carried out by an assessment team consisting of external auditors from the Polish Centre for Testing and Certification (PCBC). Following the certification process on 18 July 2003, PCBC awarded CLKP a Quality System Certificate (No. 997/1/2003), which currently covers the following areas:

1) issuing opinions and reports for the purposes of proceedings conducted by organisational units of the Police and at the request of other law enforcement and judicial authorities;
2) organising and providing training for police forensic experts, and supporting the professional development of forensic technicians;
3) implementing, maintaining and improving the working standards in police forensic laboratories;
4) maintaining forensic databases;
5) developing examination methods and cooperating with national and international police and non-police bodies in the field of forensics;
6) undertaking scientific research and development work aimed at advancing Polish forensics and providing modern tools for combating crime.

POLSKIE CENTRUM BADAŃ I CERTYFIKACJI

ZAŁĄCZNIK DO CERTYFIKATU

WAŻNY TYLKO ŁĄCZNIE Z CERTYFIKATEM

Nr J - 997/9/2024

Potwierdza się, że następujące lokalizacje:

- **Centralne Laboratorium Kryminalistyczne Policji**
  Al. Ujazdowskie 7, 00-583 Warszawa
- **Wydział Badań Daktyloskopijnych i Traseologicznych**
  ul. Wiśniowa 58a, 02-520 Warszawa
- **Wydział Badań Genetycznych**
  ul. Iwicka 14, 00-735 Warszawa

w następującym zakresie:

- **wydawanie opinii i sprawozdań na potrzeby postępowań prowadzonych przez jednostki organizacyjne Policji oraz na zlecenie innych organów ścigania i wymiaru sprawiedliwości**
- **organizowanie i prowadzenie procesu szkolenia policyjnych biegłych kryminalistyki oraz wspieranie doskonalenia zawodowego techników kryminalistyki**
- **wdrażanie, utrzymanie i doskonalenie standardów pracy w policyjnych laboratoriach kryminalistycznych**
- **prowadzenie zbiorów danych kryminalistycznych**
- **rozwój metod badawczych oraz współpraca z krajowymi i międzynarodowymi podmiotami policyjnymi i pozapolicyjnymi w zakresie techniki kryminalistycznej**
- **podejmowanie badań naukowych i prac rozwojowych mających na celu rozwój polskiej kryminalistyki i zapewniających nowoczesne narzędzia do walki z przestępczością**

spełniają wymagania powyższej normy wymienionej w Certyfikacie.

MEMBER OF IQNET

PCA AC 019

IAF

Aleksandra Kostrzewa
Prezes Zarządu

Wydany na podstawie umowy nr 1392/J/6/2024
Data decyzji o certyfikacji: 05.08.2024
Certyfikat opatrzony podpisem kwalifikowanym.
Warszawa, 06.08.2024 r.

Strona 1 z 1

Polskie Centrum Badań i Certyfikacji S.A. ul. Puławska 469, 02-844 Warszawa tel.: +48 22 45 46 200, pcbc@pcbc.gov.pl

Fig. 1. Certificate annex

During that period, it became "fashionable" for enterprises, businesses and institutions – including organisational units of the Police – to have a certified system that met the requirements of the ISO 9001 standard. The practice has not become established though, as no police unit currently maintains this certified system This was probably because it was introduced hastily and haphazardly 'by order', without first diagnosing the needs or adapting it to the prevailing circumstances. The sensible and well-considered implementation of the requirements set out in standards into day-to-day work helps to streamline many areas and processes within an organisation, while consistency and determination in implementing them enable these areas and processes to be improved.

Successive stages of standarization

For many years, the Central Forensic Laboratory of the Police has consistently set the direction for the development of police forensics, promoting optimisation and standardisation in forensic examinations. After obtaining its Quality Management System Certificate, CLKP became Poland's first laboratory to be fully oriented to quality management.

Building on the foundations laid by the integration of

ISO 9001 requirements into its day-to-day operations, CLKP began intensive work on implementing another standard, this time focused on technical and testing activities, namely EN ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories". Its implementation was also preceded by a series of training sessions run by an external company. The preparations for the accreditation of testing methods differed from those for certification. In the case of ISO/IEC 17025, the most important aspect was the development of testing procedures that would describe in great detail how to carry out testing, often supplemented by specific instructions. To this end, meetings were organised for specialist teams consisting of experts from police forensic laboratories representing the various specialisms within forensic science, namely: marks, dactyloscopy, toolmark examination, document examination, forensic genetics, road traffic accidents, chemical analysis, and weapons and ballistics. The aim of the meetings was to develop standardised testing procedures to be followed by all police forensic laboratories and which could be submitted to PCA for accreditation. At the same time, while the specialist teams were developing the testing procedures, training sessions were being held for those who were to become internal auditors. Selecting the proper staff to carry out the auditor's tasks was a difficult undertaking, given that CLKP exercises technical supervision over the laboratories of the voivodship (and Metropolitan) Police headquarters, and at that time the experts were conducting inspection activities rather than assessment activities. In addition, auditor candidates were required to possess key personal qualities: good communication skills, integrity, attention to detail, decisiveness, a sense of responsibility, analytical thinking, the ability to work well with others, and the ability to maintain the confidentiality of information obtained during the audit. The audit process itself also differed from control activities. During regular training sessions, auditors were instructed to share their knowledge and verify the compliance of the tasks carried out or the tests conducted with applicable standards, regulations, established norms and, above all, with the documentation describing the implemented system, including the testing procedures. It was emphasised during the training that internal audits should be preventive in nature, aimed at improving the effectiveness of the tasks carried out, but should also identify irregularities or potential risks, with the aim of highlighting possible improvements, optimising and refining operations. In summary, all the training courses in auditing emphasised that a well-conducted audit and the resulting report should provide valuable guidance for management and serve as the basis for implementing measures to improve and optimise laboratory operations.

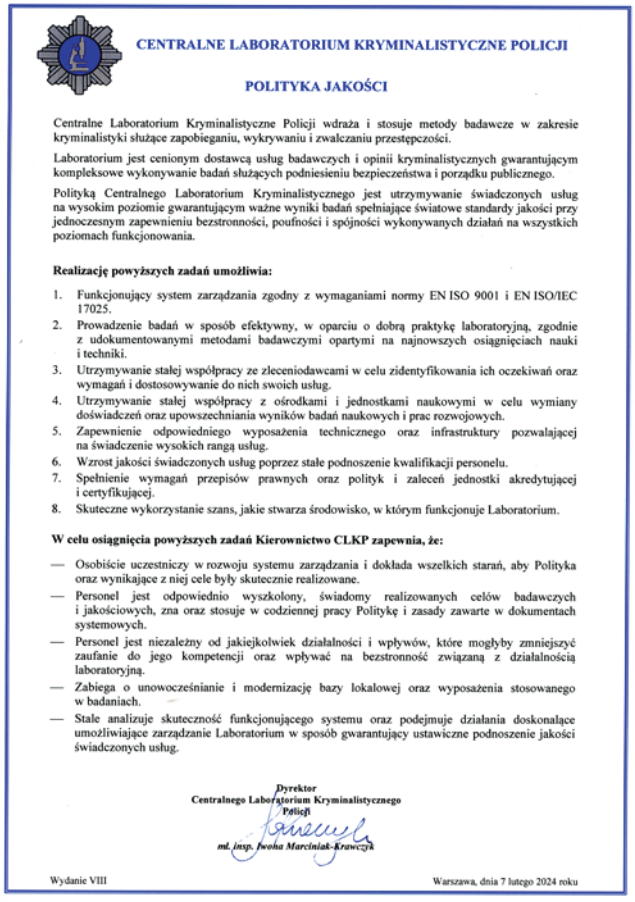
Prior to CLKP's application for quality management system certification and third-party accreditation, internal audits and management reviews had to be carried out. Staff competence had to be confirmed through mandatory participation in proficiency testing. It was very difficult to find companies on the Polish market that offered competence testing across such a wide range of forensic examinations as those submitted by CLKP for accreditation. It was therefore necessary to explore the offerings of institutions outside Poland. Our laboratory's membership in the European Network of Forensic Science Institutes (ENFSI) proved to be of great help during the initial phase of implementation of the quality management system. ENFSI is Europe's leading organisation bringing together Europe's foremost forensic laboratories which promote a quality-oriented approach to forensic examinations. ENFSI was Europe's first platform for the direct exchange of forensic knowledge and experience between experts. This organisation was also tasked with effectively promoting forensic science across Europe by developing and disseminating the latest technological advances, implementing uniform examination procedures, drafting manuals, and promoting, among all member laboratories, the principles of good laboratory practice and international standards that guarantee the quality of examinations, staff competence and the quality of forensic examination results. It was during ENFSI expert meetings on various forensic disciplines that experiences regarding ongoing examinations were exchanged, inter-laboratory comparisons were organised – in which experts from CLKP took part – and information was obtained about the US-based organisation Collaborative Testing Services Inc. (CTS), which offers proficiency testing in the field of forensic science to European laboratories. Despite the purchasing procedure being rather complicated in the early stages, CLKP has been a client of CTS for over 20 years now. CTS currently holds an accreditation certificate (Certificate No. AP-1884) for compliance with the ISO/IEC 17047 standard – "Conformity assessment. General requirements for proficiency testing". The results of the proficiency testing in which CLKP staff took part confirm their competence and the high quality of the examinations they carry out. Recognising the benefits of participating in such programmes, our laboratory began organising regular inter-laboratory comparisons for other police forensic laboratories. To this end, procedures were drawn up describing the process for organising proficiency testing through inter-laboratory comparisons in specific specialisms. The involvement of various specialist laboratories, such as those specialising in chemistry, dactyloscopy, document examination, marks, toolmarks and ballistics, in these examinations enables an ongoing assessment of the correctness of the examination process. It also allows for a prompt response to any potential risks to the quality of the expected results. Participation in relevant proficiency testing programmes and the achievement of satisfactory results in those programmes were a prerequisite for applying for accreditation, maintaining accreditation and confirming the competence of forensic laboratories.

Having met a further prerequisite, i.e. the requirements of ISO/IEC 17025, concerning the demonstration of staff competence through participation in proficiency testing, CLKP was able to submit its management system and specific examination methods for accredita-

tion by the Polish Centre for Accreditation (PCA) – the country's only accreditation body authorised to accredit conformity assessment bodies under the Polish Act *on conformity assessment and market oversight systems*, possessing the status of a state legal entity supervised by the Minister in charge of economy.

It is also worth noting that whether or not a laboratory succeeds in achieving accreditation and subsequently in refining its systems depends on the vision and strategy of its management. It is the management that formulates the quality policy which reflects the entire laboratory's commitment to the quality management system. The main aspects of that policy, as required by the standard and set out in CLKP's policy, include, among others:

- mission and vision,
- a commitment to carry out examinations in accordance with the requirements of the standard and procedures, while maintaining impartiality, confidentiality and independence,
- mechanisms for the continuous improvement of the management system's effectiveness, including staff training,
- ensuring that staff are familiar with and follow QMS procedures in their work.



CENTRALNE LABORATORIUM KRYMINALISTYCZNE POLICJI

POLITYKA JAKOŚCI

Centralne Laboratorium Kryminalistyczne Policji wdraża i stosuje metody badawcze w zakresie kryminalistyki służące zapobieganiu, wykrywaniu i zwalczaniu przestępczości.

Laboratorium jest cenionym dostawcą usług badawczych i opinii kryminalistycznych gwarantującym kompleksowe wykonywanie badań służących podniesieniu bezpieczeństwa i porządku publicznego.

Polityką Centralnego Laboratorium Kryminalistycznego jest utrzymywanie świadczonych usług na wysokim poziomie gwarantującym ważne wyniki badań spełniające światowe standardy jakości przy jednoczesnym zapewnieniu bezstronności, poufności i spójności wykonywanych działań na wszystkich poziomach funkcjonowania.

Realizację powyższych zadań umożliwia:

1. Funkcjonujący system zarządzania zgodny z wymaganiami normy EN ISO 9001 i EN ISO/IEC 17025.
2. Prowadzenie badań w sposób efektywny, w oparciu o dobrą praktykę laboratoryjną, zgodnie z udokumentowanymi metodami badawczymi opartymi na najnowszych osiągnięciach nauki i techniki.
3. Utrzymywanie stałej współpracy ze zleceniodawcami w celu zidentyfikowania ich oczekiwań oraz wymagań i dostosowywanie do nich swoich usług.
4. Utrzymywanie stałej współpracy z ośrodkami i jednostkami naukowymi w celu wymiany doświadczeń oraz upowszechniania wyników badań naukowych i prac rozwojowych.
5. Zapewnienie odpowiedniego wyposażenia technicznego oraz infrastruktury pozwalającej na świadczenie wysokich rangą usług.
6. Wzrost jakości świadczonych usług poprzez stałe podnoszenie kwalifikacji personelu.
7. Spełnienie wymagań przepisów prawnych oraz polityk i zaleceń jednostki akredytującej i certyfikującej.
8. Skuteczne wykorzystanie szans, jakie stwarza środowisko, w którym funkcjonuje Laboratorium.

W celu osiągnięcia powyższych zadań Kierownictwo CLKP zapewnia, że:

— Osobiście uczestniczy w rozwoju systemu zarządzania i dokłada wszelkich starań, aby Polityka oraz wynikające z niej cele były skutecznie realizowane.
— Personel jest odpowiednio wyszkolony, świadomy realizowanych celów badawczych i jakościowych, zna oraz stosuje w codziennej pracy Politykę i zasady zawarte w dokumentach systemowych.
— Personel jest niezależny od jakiejkolwiek działalności i wpływów, które mogłyby zmniejszyć zaufanie do jego kompetencji oraz wpływać na bezstronność związaną z działalnością laboratoryjną.
— Zabiega o unowocześnianie i modernizację bazy lokalowej oraz wyposażenia stosowanego w badaniach.
— Stale analizuje skuteczność funkcjonującego systemu oraz podejmuje działania doskonalące umożliwiające zarządzanie Laboratorium w sposób gwarantujący ustawiczne podnoszenie jakości świadczonych usług.

Dyrektor
Centralnego Laboratorium Kryminalistycznego
Policji
mł. insp. Iwona Marciniak-Krawczyk

Wydanie VIII Warszawa, dnia 7 lutego 2024 roku

Fig. 2. Quality Policy

It should be noted that management systems are based on people rather than equipment or infrastructure. The success of the whole enterprise depends largely on their commitment and expertise.

Submitted for accreditation is a system that is already operational, where internal audits and management reviews are carried out on a regular basis in accordance with the schedule, and where staff carry out their duties in a conscientious manner in accordance with the applicable procedures. In hindsight, it is clear that one should absolutely avoid dividing the laboratory into areas where a quality management system has been introduced and areas where no such system has been implemented. By its very nature, this approach gives rise to a number of misunderstandings and ambiguities, resulting in the coexistence within the same institution of two distinct entities: one that is part of the system – organised and well-structured – and one that is not – chaotic and disorganised. Therefore, efforts should be made to implement the system across the laboratory, and only selected testing methods – or those imposed by the regulator – should be accredited, as was the case with the mandatory accreditation of DNA and fingerprint examinations. This obligation stemmed from the requirements set out in Council Framework Decision 2009/905/JHA *on accreditation of forensic service providers carrying out laboratory activities*. The purpose of its implementation was "to ensure that the results of laboratory activities relating in particular to sensitive personal data, such as DNA profiles and dactyloscopic data, obtained by accredited forensic service providers in one Member State are regarded as equally reliable (valid) as the results of laboratory activities carried out by forensic service providers accredited to ISO/IEC 17025 within any other Member State" (Council Framework Decision 2009/905/JHA, Article 1).

In 2004, i.e. before the aforementioned decision came into force, CLKP applied to the PCA for accreditation of a testing laboratory meeting the requirements of ISO/IEC 17025 for selected test methods, of which eight are currently accredited, namely:

- "Fingerprint examination", No. BJ-W-VII-Pb-1,
- "Forensic DNA examination using multiplex STR systems", No. BJ-W-VIII-Pb-1,
- "Manuscript examination", No. BJ-W-IV-Pb-1,
- "Examination of the authenticity of secured documents", No. BJ-W-IV-Pb-2,
- "Examination of weapons and ammunition", No. BJ-W-V-Pb-2,
- "Examination of toolmarks and identification marks", No. BJ-W-V-Pb-1,
- "Marks examination – shoe print examination", No. BJ-W-VII-Pb-2,
- "Identification of gunshot residues using the SEM/EDX method", No. BJ-W-VI-Pb-3.

It is important to understand that an accreditation certificate marks the start of an organisation's quality management journey, and that it is essential to continue to improve and develop the system on an ongoing basis. It is only after the system has been in operation for two to four years that one can say that some of the objectives have been achieved, although this does not mean the work is complete.

Research methods are constantly evolving, and they need to be updated and aligned with the latest international standards. The editions of standards and the requirements they contain are changing.


POLSKIE CENTRUM AKREDYTACJI
POLISH CENTRE FOR ACCREDITATION
PCA
Sygnatariusz EA MLA
EA MLA Signatory
CERTYFIKAT AKREDYTACJI
LABORATORIUM BADAWCZEGO
ACCREDITATION CERTIFICATE OF TESTING LABORATORY
Nr AB 596
Potwierdza się, że: / This is to confirm that:
CENTRALNE LABORATORIUM
KRYMINALISTYCZNE POLICJI
Al. Ujazdowskie 7, 00-583 Warszawa
spełnia wymagania normy PN-EN ISO/IEC 17025:2018-02
meets requirements of the PN-EN ISO/IEC 17025:2018-02 standard
Akredytowana działalność jest określona w Zakresie Akredytacji Nr AB 596
Accredited activity is defined in the Scope of Accreditation No AB 596
Akredytacja pozostaje w mocy pod warunkiem przestrzegania
wymagań jednostki akredytującej określonych w kontrakcie Nr AB 596
This accreditation remains in force provided the Laboratory observes
the requirements of Accreditation Body defined in the Contract No AB 596
Akredytacji udzielono dnia 16.05.2005 r.
Accreditation was granted on 16.05.2005
POLSKIE CENTRUM AKREDYTACJI
DYREKTOR
POLSKIEGO CENTRUM AKREDYTACJI
LUCYNA OLBORSKA
Warszawa, 5 marca 2020 roku

Fig. 3. Testing Laboratory Accreditation Certificate

Take, for example, the ISO 9001 standard: since CLKP obtained its quality management certification in 2003, the standard has already been revised three times (ISO 9001:2001, ISO 9001:2009 and ISO 9001:2015-10 – currently in force), and on each occasion, before the end of the three-year transition period, it was necessary to modify the quality manual and system procedures. The same is true for ISO/IEC 17025, which saw the release of its third edition in 2018, and CLKP had to base its system successively on the requirements of all three editions (ISO/IEC 17025:1999, ISO/IEC 17025:2005, ISO/IEC 17025:2018-02 – currently in force). It is worth noting that the structure of the third edition of ISO/IEC 17025:2018-02 has been completely revised compared to the previous edition. What comes to the fore here is a completely different approach to laboratory management. The current standard has been aligned with the structure of other recently revised standards, such as the aforementioned ISO 9001:2015-10. Its structure consists of two main parts. Chapters 4 to 7 inclusive, which make up Part 1, set out the requirements specific to laboratory activities from a process perspective, including the need to identify risks, particularly in relation to ensuring impartiality and confidentiality. The standard places emphasis on staff competence - the staff should be fully aware of their duties, responsibilities and powers. Attention was also drawn to the need to provide all the necessary material resources to ensure proper laboratory operations, including equipment with established and maintained measurement traceability, as well as laboratory premises with appropriate environmental conditions suited to the examinations being carried out. Part 2, on the other hand, contains the requirements for the management system, which are presented in options. Option A, in short, involves implementing requirements relating to management system documentation, improvement, corrective actions, internal audits and management reviews. Option B, on the other hand, involves meeting the requirements for the management system by establishing and maintaining it in accordance with the requirements of ISO 9001, whilst supporting and demonstrating ongoing compliance with the requirements set out in Part 1. The standard also includes two annexes that were not included in its previous editions. Annex A (informative) on measurement consistency and Annex B (informative) on management system options. Annex B, which is of particular importance to CLKP, has enabled the adoption of a management system based on the ISO 9001 standard, as our organisation is certified for compliance with its requirements. The new edition also includes terms such as: laboratory activities, organisational context, impartiality, confidentiality and valid results. The latter term essentially means the same as “reliable results”, which is credible, i.e. reported with a specified margin of uncertainty, useful, i.e. suitable for achieving a given objective, and accurate, i.e. obtained under conditions that meet the requirements of good laboratory practice.

Maintaining Certification and Accreditation

The activities described in this paper relating to the implementation, certification and accreditation of quality management systems at CLKP have been ongoing for almost 25 years. CLKP has held a Quality Management System Certificate for 22 years and a Testing Laboratory Accreditation Certificate for 20 years. The system is assessed twice a year by two independent bodies – the Polish Centre for Accreditation and the Polish Centre for Testing and Certification. Sometimes the assessments result in more comments – or, to use the standard’s terminology, “non-conformities” – and sometimes fewer, but every such meeting with external auditors, who observe the laboratory’s operations from a completely different perspective, focusing on compliance with the standard’s requirements, yields tangible results. The competence of CLKP, as confirmed by a third-party audit, demonstrates the high quality of the examinations carried out and the effective supervision of work at CLKP. In the case of police forensic laboratories, maintaining this very “quality” primarily translates into a reliable and professionally prepared forensic report containing credible findings, which constitutes admissible evidence in court.

Other equally important benefits associated with the quality management system, which has been in place and operational for over twenty years now, include:

– better organisation of work and improved efficiency –

accreditation requires the structuring of examination areas by establishing appropriate procedures, ensuring the reproducibility of the examination process, a uniform method of documentation, and the standardisation of examination methods;
- reliable and accurate examination results – accreditation ensures that the results obtained are valid, reliable and accurate, thereby reducing the likelihood of erroneous examination results;
- strengthening the market position and enhancing prestige – the accreditation certificate issued by the Polish Centre for Accreditation is recognised globally in accordance with the principle of "tested or certified once – accepted everywhere",
- client confidence – accreditation serves as objective proof that the laboratory operates in accordance with best professional practice, as well as being a key consideration when commissioning examinations where accreditation is mandatory.

In summary, looking back over more than twenty years, it can be said that the objective of implementing and maintaining a quality management system at CLKP has been achieved – our laboratory operates in accordance with the applicable standards, as confirmed by independent bodies. The tasks involved in maintaining and improving the management system are by no means easy, and they continue to require a great deal of commitment, patience and perseverance in the pursuit of excellence.

Source of the figures

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