

A new legal basis and communication platform for the Swiss DNA database

C. Haas^{a,*}, P. Voegeli^a, M. Hess^b, A. Kratzer^a, W. Bär^a

^a *Institute of Legal Medicine, Forensic Genetics, University of Zurich, Winterthurerstrasse 190, 8057 Zurich, Switzerland*

^b *Federal Office of Police, Bern, Switzerland*

Abstract. The Swiss federal DNA profile information system (EDNA) has been launched in July 2000 for a test period of 4 years under a temporary legislation. Based on that experience a new law was put in place in January 2005. Furthermore, a new web-based communication platform was implemented, which allows for faster processing and immediate retrieval of the actual state of the workflow. © 2005 Elsevier B.V. All rights reserved.

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1. Introduction

In 1997, an expert commission was appointed to evaluate specific issues related to a national DNA database for Switzerland. The experts also relied on reports from other countries, which were already running national DNA databases at that time (England, Wales, Austria, Germany, USA). The expert commission suggested to start out with a test phase and a rudimentary workflow based on a temporary legal regulation. Requirements included a strict separation of DNA data, on the one hand, and person and case data, on the other hand.

2. Law

On 31st May 2000, a temporary legal regulation for the 4-year test period became effective (EDNA-Verordnung). In July 2000, the Swiss DNA database started operations [1]. DNA profiles of suspects, convicted offenders and of stains associated to crimes listed in a crime catalogue (Table 1) were entered into the database. During the test period, DNA profiles of people were deleted only upon individual and specific request and upon

* Corresponding author. Tel.: +41 44 635 56 56; fax: +41 44 635 68 58.

E-mail address: haco@irm.unizh.ch (C. Haas).

Table 1
Old and new legislation for entering/not entering DNA profiles into the database

Swiss crime catalogue (2000–2004)	Criteria for entering DNA profiles into the database (since 2005)	Criteria for not entering DNA profiles into the DNA database or for removing them from the DNA database
<ul style="list-style-type: none"> • Homicide, bodily harm • Theft, damage to property, fraud, extortion • Kidnapping • Sexual offences • Arson • Participation in criminal organisations • Money laundering, illegal drug offences 	<ul style="list-style-type: none"> • Suspects for crimes • Convicted offenders • Dead persons • Stains • Unidentified people • Missing people • Relatives of dead or missing people 	<p><i>Since 2000:</i></p> <ul style="list-style-type: none"> • Victims • People that are authorized to be at the crime site • People that could be excluded as perpetrators in a mass investigation <p><i>Additionally since 2005:</i></p> <ul style="list-style-type: none"> • Suspects that could be excluded as perpetrators • The investigation remains inconclusive and is closed

subsequent authorization by the responsible judicial authority. Since 1st January 2005, a new legislation for the Swiss DNA database is effective (DNA-Profil-Gesetz [2], DNA-Profil-Verordnung). New criteria for entering a profile into the database were established, which are no longer based on a catalogue of specific crimes (Table 1). Instead, people can be entered into the DNA database on the basis of much wider criteria. The new law forces the automatic removal of DNA profiles of certain people based on the outcome of the legal proceeding in each case.

3. Communication platform

During the test period, data was transmitted per post, fax or E-mail. In January 2005, a new web-based communication platform (Message Handler, provided by the Swiss federal authorities) was implemented (Fig. 1). This workflow tool links all partners of the process and keeps control over every single case, its activities and its progress. The progress of each case is transparently available to all involved parties at any time. As a first step in the new process (Fig. 1), the investigating police unit takes buccal swabs from suspects and collects stains from crime scenes. Every buccal swab or stain will then be linked to a unique and anonymized process control number (PCN). Ancillary data (including the fingerprint form) related to the buccal swab (suspect sample) is stored in IPAS, a separate database for person and case data which is operated by the AFIS DNA Services (a Swiss federal police unit). The necessary case data to process a stain (forensic sample) at a licensed DNA laboratory is entered into the Message Handler by the police and subsequently stored in IPAS. There are six regional DNA laboratories (Basel, Bern, Geneva, Lausanne, St. Gallen, Zurich), which are licensed to analyze these samples. Profiles that fulfill quality requirements will be submitted for entry into the DNA database, identified only by the PCN. Through the Message Handler system, investigating authorities will know immediately about profiles not meeting the quality criteria. Such sub-standard quality profiles are not forwarded for inclusion into the database. At the Central Coordination Unit, the submitted profiles are imported into the database. The new profiles are matched against the whole database on a

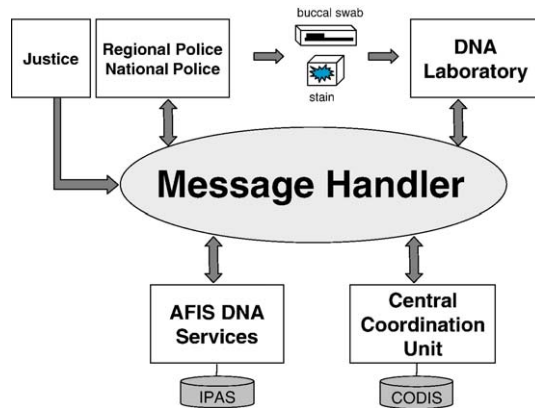


Fig. 1. Workflow Message Handler.

daily basis. Resulting matches are verified by the DNA laboratory, and if the matches are confirmed, the results will be transmitted to the AFIS DNA Services. At the AFIS DNA Services matches are linked with the corresponding names and case information (from IPAS). The final report on the DNA sample is immediately available for the investigating authorities. The system includes an automatic removal of DNA profiles, initiated by the judicial authority or the police, according to legal requirements based on the new law. A strong authentication process guarantees security of data transmission. Based on personal certificates on chip cards, the operator is allowed to access the Message Handler through the single sign on (SSO) portal. The same channel takes care of the secure data transmission.

4. Conclusions

Between European countries, DNA database legislation varies considerably. Few countries impose restrictions on the entry of crime scene stain profiles, but there are different entry criteria for convicted offender and suspect profiles. In Switzerland, DNA profiles of a rather wide range of people can be included in the database. At the same time, certain profiles are subject to a strict deletion rule. Time will tell the outcome of this approach in terms of success rate and number of profiles. The new law allows the entry of missing or unidentified persons and relatives of dead or missing persons. In order to deal with this kind of cases in Switzerland, additional processes will need to be implemented. The full integration of the Police, the DNA laboratories, the Central Coordination Unit (database), the AFIS DNA Services and the Justice authority into the Message Handler platform made the process efficient and fast and eliminates errors in transmission and communication. A standardization of the process is achieved through restricting user options to predefined choices, which is why the system's efficiency for uncommonly individual cases is somewhat restricted. Moreover, the Message Handler allows the user to choose one of the Swiss national languages (German, French, Italian).

References

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