



The regulatory landscape of forensic DNA phenotyping in Europe

Dr Gabrielle Samuel – King's College London, UK

Professor Barbara Prainsack - King's College London, UK

Dr Gabrielle Samuel
Department of Global Health and Social Medicine
King's College London
Bush House, North East (NE) Wing
30 Aldwych
London WC2B 4BG

Professor Barbara Prainsack
Department of Global Health and Social Medicine
King's College London
Bush House, North East (NE) Wing
30 Aldwych
London WC2B 4BG

© Copyright remains with the authors

Please cite as:
Samuel, G, Prainsack, B (2018) The regulatory landscape of forensic DNA phenotyping in Europe VISAGE

The work leading to the results in this report has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement number 740580 (VISAGE).

November 2018

EXECUTIVE SUMMARY

This Report aims to describe how the European Union's legal and regulatory framework, along with the legal and regulatory frameworks of eight European countries, including Austria, France, Germany, Poland, The Netherlands, Spain, Sweden and The United Kingdom, accommodate the use of a new forensic DNA technology, forensic DNA phenotyping (herein referred to as FDP). This report also provides a basic overview of the legal permissibility and practice of FDP in all other EU member states, as well as other countries of interest, namely the United States, South Africa and Australia.

The Report:

- includes an in-depth analysis of the regulatory and legal frameworks in each of the eight European countries stated above, including detailed information about whether FDP is legally permitted and/or practiced;
- describes any ongoing country-specific policy discussions regarding FDP in these countries;
- highlights country-specific legal questions which remain open in terms of FDP regulation in these countries (summarised in box format at the end of each Chapter); and
- presents a basic overview of the legal permissibility and actual practice of FDP in all other EU members states.

The key findings from the eight countries are highlighted in the table 2 below, and discussed in more detail in the individual country sections.

The overview of the legal permissibility and actual practice of FDP in all other EU member states is presented below in Table 1.

Comments about the Report can be referred to the authors, Dr Gabrielle Samuel (gabrielle.samuel@kcl.ac.uk) and Professor Barbara Prainsack (barbara.prainsack@kcl.ac.uk). Scientific publications discussing the findings of the Report will be published in due course.

This Report has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement number 740580 (VISAGE).and has been prepared as part of VISAGE project, The VISAGE project aims to develop, validate and implement an FDP tool to allow the probabilistic inference of appearance, age, and biogeographical ancestry from the DNA of anonymous crime scene traces, as well as from the DNA of unidentified human remains, for identification purposes.

Table 1: Legal permissibility and practice of FDP in EU member states and international countries*

EU member states	Explicit FDP legislation?	Implicit FDP legislation?	FDP practiced?	Policy discussions about FDP underway?
Belgium	No	Current law forbids using coding markers for identification purposes, though there is dispute regarding whether FDP is practiced for “identification purposes” and therefore whether it is actually forbidden	For ancestry	At university/institutional level, not political level in terms of what an explicit legislation for FDP would look like
Bulgaria	Unknown	Unknown	Unknown	Unknown
Croatia	No	No	No	No, and no plans to implement in law
Cyprus	No	No	No	No
Czech Republic	No	No	1 + appearance trait predictions	No
Denmark	No	Unknown	No, but experimental use in a few selected identification cases	No
Estonia	No	No	No	Unknown
Finland	No	No	No	Yes
Greece	No	Yes - 200A of Criminal Code	No	No
Hungary	No	No	1 + appearance trait predictions	No
Ireland	No	Yes - Criminal justice (Forensic and DNA database Act) 2014 - within this Act DNA profiling is restricted to non-coding areas	No	No
Italy	No	No	Ancestry	No

EU member states	Explicit FDP legislation?	Implicit FDP legislation?	FDP practiced?	Policy discussions about FDP underway?
Latvia	No	Respondent thinks it is not, but there is no legal precedent for use of FDP	No	No
Lithuania	No	No	No	No
Luxembourg	No	Yes - A-N ° 163: Act of 25 August 2006 on procedures for identification by DNA in criminal matters and amending the Code of Criminal Procedure - Art. 48-3	No	No
Malta	No	No	No	No
Portugal	No	No	No	No
Romania	Unknown	Unknown	Unknown	Unknown
Slovakia	Act no.417/2002, § 2, a, f; § 4. New paragraphs are active since May 2018**	N/A	1 + appearance trait predictions	No
Slovenia	No	No	No – though laboratories are capable of doing the analysis	No

Non-EU countries	Explicit FDP legislation?	Implicit FDP legislation?	FDP practiced?	Policy discussions about FDP underway?
Australia	No	No	No (though FDP has been used in one case for confirmation purposes)	Yes

Non-EU countries	Explicit FDP legislation?	Implicit FDP legislation?	FDP practiced?	Policy discussions about FDP underway?
South Africa	No	Yes - Criminal Law (Forensic Procedures) Amendment Act 37 of 2013	No	Slabbert and Heathfield (2018) have recently recommended a change in legislation (Ethical, legal and social implications of forensic molecular phenotyping in South Africa. Bioethics. DOI: 10.1111/dewb.12194)
United States	No federal legislation – relies on state law. Some states (eg Texas) have explicit regulation, most states do not.	No federal legislation – relies on state law. Most states do not implicitly forbid FDP, some states do (though the wording of these laws is open to interpretation (e.g. Indiana, Rhode Island, Wyoming).	In some states for appearance, ancestry and age	There has been much academic discussion.

*This overview is based on a survey emailed to a range of forensic science stakeholders residing in relevant countries, as well as advertised on Facebook. The survey asked stakeholders:

- if their country had any explicit legislation relating to FDP (and if so, what legislation?);
- if their country had any implicit legislation forbidding the use of FDP (and if so, what legislation?);
- whether FDP is practiced in their country (and if so, which tests?); and
- whether any country-specific policy discussions are underway regarding the practice/permissibility of FDP.

Exceptions include Denmark and Estonia, for which information was based on findings from the EUROFORGEN project (<https://www.eurofor.gen.eu/>), and South Africa and the United States, for which information was based on published literature.

** The Slovakian legislation can be found at <https://www.noveaspi.sk/products/lawText/1/53973/1/2>. We have translated the relevant sections of the legislation as they pertain to FDP, and they state:

“Deoxyribonucleic acid analysis is the process of analyzing the sample using the methods of molecular biology and genetics carried out on non-coding sections of the deoxyribonucleic acid molecule that do not contain information on specific hereditary qualities; deoxyribonucleic acid analysis shall also be taken to include the prediction of visible phenotype demonstrations..... The prediction of visible phenotypic traits may only be carried out on a sample collected in relation to a particularly severe crime, (5b) in relation to a crime against life and limb, a crime against freedom and human dignity, (5c) in relation to the identification of a corpse or severed parts of the human body unless the identity of the person shall have been ascertained through the deoxyribonucleic acid analysis in a database or in the national databases of deoxyribonucleic acid profiles of EU-member countries according to a special by-law”

Table 2: Summary of legal and regulatory landscape relating to the use of FDP in eight EU countries

Country	Explicit regulation of FDP?	Implicit regulation forbidding FDP?	FDP practiced?	Policy currently being debated?	Summary
Austria*	No	Yes	No	Not widely (limited to expert circles)	<p>FDP is considered forbidden because legal provisions state that forensic DNA analyses using coding markers is forbidden. Although the non-coding/coding boundary has become analytically problematic, parliamentary materials accompanying pertinent legislation in Austria make it clearly apparent that legislators sought to preclude the use of DNA-based information that could disclose character traits, disease information.</p> <p>It is less clear whether the legislator, with restricting permissible DNA analysis to non-coding (understood as non-informative) markers, also intended to preclude the use of DNA information to infer externally visible traits.</p>
France	No	Yes	Yes	Yes	<p>Explicit legislation forbids FDP, but a recent court case decision allowed FDP for 'morphological characteristics'. The court decision leaves FDP in legally ambiguous territory. At the moment, policy discussions are underway to try and resolve the situation.</p> <p>Moreover, ambiguities remain regarding which traits can be defined as 'morphological', and in turn be legally inferred from DNA.</p>
Germany	No	Yes	No	Yes	<p>FDP is considered forbidden because legal provisions state that forensic DNA analyses using coding markers is forbidden. As such, FDP is not practiced for biogeographical ancestry, age and appearance.</p> <p>Legislative plans have been proposed to permit the identification of certain externally visible traits and biogeographical ancestry. Discussions about ethical and societal aspects of the proposed change are currently underway.</p>
Poland	No	No	Yes	No	<p>Currently FDP is practiced for biogeographical ancestry, age and appearance.</p> <p>Regulation allows forensic genetic data processing only for non-coding regions, though experts note this regulation only applies to when storing genetic data rather than when analysing it.</p>

Country	Explicit regulation of FDP?	Implicit regulation forbidding FDP?	FDP practiced?	Policy currently being debated?	Summary
Spain	No	No	Yes	Yes	Currently FDP is practiced for biogeographical ancestry, age and appearance. In the upcoming months the use of FDP for biogeographical ancestry and phenotypic (including age) inferences will be reviewed and a decision proposed for policy.
Sweden	No	No	Yes	No	FDP is permitted for biogeographical ancestry, age and appearance, but it is not yet practiced. Rather, when required, the Swedish National Forensics Centre request international laboratories to conduct the testing for them. Results of these tests may be used by law enforcement for forensic intelligence purposes.
The Netherlands	Yes	No	Yes	No	FDP is permitted to infer biogeographical ancestry, hair and eye colour. A Royal Decree is required for any further externally visible characteristics to be permitted.
United Kingdom (UK)	No	No	Yes	Not widely (limited to expert circles)	A number of regulatory bodies oversee forensic DNA technologies in the UK, though they have engaged little with the issues relating to FDP. As yet no recommendations regarding FDP practice have been developed.

* The work for this Deliverable was concluded in April 2018, and the description of the legal status reflects the situation at that date. We note that since May 2018, FDP has been considered legal in Austria, following a revision of the *Sicherheitspolizeigesetz* (Security Police Act) to adjust it to the European new data protection framework. Only DNA markers that are suitable for the purpose of identification can legally be used to infer likely characteristics of perpetrators (health-related dispositions, or markers pertaining to personality traits, cannot), and any use of FDP must be proportional. This is interpreted by experts to mean that FDP can only be the last resort in the case of very serious crimes.

Contents

1. Introduction	9
1.1 Forensic DNA phenotyping	9
1.2 Ancestry, age and appearance inference	9
1.2.1 Biogeographical ancestry inference	9
1.2.2 Age inference	10
1.2.3 Appearance inference	11
1.3 Coding and non-coding regions of DNA	11
1.4 FDP purpose and storage of FDP findings	12
1.4.1 FDP purpose	12
1.4.2 FDP data storage	12
2. Methodology	14
3. EU Law	15
3.1 Primary EU Law	15
3.2 The General Data Protection Regulation (GDPR)	15
3.3 The Police Directive	16
3.4 The Prüm framework	20
4. Austria	22
4.1 Introduction	22
4.2 Relevant legislation	22
4.3 Regulation relating to the use of FDP	23
4.4 Situation regarding the use of FDP	24
4.4.1 Age	25
4.4.2 Ancestry	25
4.4.3 Appearance	25
4.5 Regulation of the storage of FDP findings in a national database	25
4.5.1 Age	26
4.5.2 Ancestry	26
4.5.3 Appearance	26
4.6 Current policy discussions	26
4.7 FDP for unidentified human remains	27
4.8 Open questions	28
5. France	29
5.1 Introduction	29
5.2 Relevant legislation	29
5.3 Regulation relating to the use of FDP	29
5.4 Situation regarding the use of FDP	33
5.4.1 Age	33
5.4.2 Ancestry	34

5.4.3 Appearance	34
5.5 Regulation of the storage of FDP findings in a national database	34
5.5.1 Age	34
5.5.2 Ancestry	34
5.5.3 Appearance	35
5.6 Current policy discussions	35
5.7 FDP for unidentified human remains	36
5.8 Open questions	36
6. Germany	37
6.1 Introduction	37
6.2 Relevant legislation	37
6.3 Regulation relating to the use of FDP	37
6.4 Situation regarding use of FDP	39
6.4.1 Age	39
6.4.2 Ancestry	40
6.4.3 Appearance	40
6.5 Regulation of the storage of FDP findings in a national database	40
6.5.1 Age	40
6.5.2 Ancestry	40
6.5.3 Appearance	41
6.6 Current policy discussions	41
6.7 FDP for unidentified human remains	42
6.8 Open questions	43
7. Poland	44
7.1 Introduction	44
7.2 Relevant legislations	44
7.3 Regulation regarding the use of FDP	44
7.4 Situation relating to the use of FDP	46
7.4.1 Age	46
7.4.2 Ancestry	46
7.4.3 Appearance	46
7.5 Regulation of the storage of FDP findings in a national database	47
7.5.1 Age	47
7.5.2 Ancestry	47
7.5.3 Appearance	47
7.6 Current policy discussions	47
7.7 FDP for unidentified human remains	48
7.8 Open questions	48
8. Spain	49
8.1 Introduction	49

8.2 Relevant legislation	49
8.3 Regulation relating to the use of FDP	50
8.4 Situation regarding use of FDP	51
8.4.1 Age	52
8.4.2 Ancestry	52
8.4.3 Appearance	52
8.5 Regulation of the storage of FDP findings in a national database	52
8.5.1 Age	52
8.5.2 Ancestry	53
8.5.3 Appearance	53
8.6 Current policy discussions	53
8.7 FDP for unidentified human remains	54
8.8 Open questions	54
9. Sweden	55
9.1 Introduction	55
9.2 Relevant Legislation	55
9.3 Regulation relating to the use of FDP	55
9.4 Situation regarding the use of FDP	57
9.4.1 Age	58
9.4.2 Ancestry	58
9.4.3 Appearance	58
9.5 Regulation of the storage of FDP findings in a national database	58
9.5.1 Age	59
9.5.2 Ancestry	59
9.5.3 Appearance	59
9.6 Current policy discussions	59
9.7 FDP for unidentified human remains	60
9.8 Open Questions	60
10. The Netherlands	61
10.1 Introduction	61
10.2 Relevant legislation	61
10.3 Regulation relating to the use of FDP	61
10.4 Situation regarding the use of FDP	65
10.4.1 Age	65
10.4.2 Ancestry	66
10.4.3 Appearance	66
10.5 Regulation of the storage of FDP findings in a national database	66
10.5.1 Age	66
10.5.2 Ancestry	67
10.5.3 Appearance	67

10.6 Current policy discussions	67
10.7 FDP for unidentified human remains	67
10.8 Open questions	68
11. United Kingdom	69
11.1 Introduction	69
11.2 Relevant legislation	69
11.3 Regulation relating to the use of FDP	70
11.4 Situation regarding the use of FDP	71
11.4.1 Age	72
11.4.2 Ancestry	72
11.4.3 Appearance	72
11.5 Regulation of the storage of FDP findings in a national database	72
11.5.1 Age	73
11.5.2 Ancestry	73
11.5.3 Appearance	73
11.6 Current policy discussions	73
11.7 FDP for unidentified human remains	73
11.8 Open questions	74
Summary	75
Glossary	77
Appendix	80
EU.1 Europe	80
A.1 Austria	83
A.1.1 Security Police Act (SPG)	83
A.1.2 Dr Reinhard Schmid's letter	84
A.2 France	99
A.2.1 Circular	99
A.2.2 Code de procédure pénale. Article 706-54	101
A.2.3 Article A38	103
A.3 Poland	104
A.3.1 Legal Opinion for the Institute of Biology 'CLKP' (Central Forensic Laboratory of the Police) (translated)	104
A.3.2 Regulation No. 26 by the Commander in Chief of the Police from 10 July 2017	106
A.3.3 Regulation relating to forensic DNA storage in a national database	114
A.3.4 Regulation relating to unidentified human remains	114
A.4 Spain	116
A.4.1 Law 15/1999 on Protection of Personal Data: Article 22	116
Index	117

1. Introduction

1.1 Forensic DNA phenotyping

This Report aims to describe how the European Union's legal and regulatory framework, along with the legal and regulatory frameworks of eight European countries, would accommodate, or would not accommodate, the use of forensic DNA phenotyping (FDP). The specific countries include Austria, France, Germany, Poland, Spain, Sweden, the Netherlands, and the UK.

We describe FDP as a tool which seeks to probabilistically infer the age, appearance and biogeographical ancestry (herein called ancestry, not to be confused with lineage ancestry (see below)) of an individual from their anonymous DNA sample. The aim is to aid criminal investigations by helping identify unknown suspected perpetrators, or to help with non-criminal missing persons cases.

FDP findings are probabilistic i.e., they can only infer a specific phenotypic feature to a certain degree of probability. Whenever the word 'prediction' is used in this Report, it is to be understood as *probabilistic* inference.

Below we provide more information about FDP for ancestry, age and appearance inference, and an explanation about how this type of forensic genetic testing differs from "traditional" forensic STR testing in terms of its purpose; the type of information the technology can provide; and the storage of FDP findings.

1.2 Ancestry, age and appearance inference

1.2.1 Biogeographical ancestry inference

In this Report we define biogeographical ancestry ("ancestry") inference as the estimation of the geographical origin of a person's biological ancestors based on DNA analysis. Ancestry inference testing using DNA is based on the understanding that a certain amount of genome variation exists between populations that have originated from different geographical locations around the world. In particular, statistically (and at a population level, but not necessarily at an individual level), certain genetic markers (sections of DNA) are variable with different variants being more prevalent in some populations than in others.

Genetic markers used to infer ancestry mainly include Single Nucleotide Polymorphisms (SNPs), but may also include Short Tandem Repeats (STRs) or insertion-deletion polymorphisms (Indels). These genetic markers are found on all autosomal chromosomes as well as the sex chromosomes;

SNPs and Indels are also found on the extrachromosomal mitochondrial genome. Ancestry is best inferred from DNA using genetic markers on the autosomal chromosomes (SNPs) in combination with those on Y-chromosomes (STR and SNPs) and mitochondrial DNA.

Leaving aside in this Report¹ the varied discussions pertaining to the concept of genetic ancestry in forensics, we note here that (biogeographical) ancestry inference and lineage ancestry testing are distinct in their purpose. Lineage ancestry testing mainly seeks to give information about an individual's paternal or maternal lineage only, and not about their biogeographical origins.

- Paternal lineage testing: Y-chromosomes, which are only present in males, are passed down unchanged through a paternal line (i.e., only from father to son) without being modified by recombination. Comparing genetic markers which appear on the Y chromosomes of different males can provide information about their paternal genetic relatedness. This is useful in forensics, for example in rape cases. Here Y-chromosomes of a range of males can be tested to identify if they are related to the suspected perpetrator (familial searching). Y-chromosome testing can also provide information about paternal (biogeographical) ancestry, but only as it relates to an individual's paternal lineage of the Y-chromosome.
- Maternal lineage testing: mitochondrial DNA is passed from mother to child.² Analysing genetic markers on this DNA can provide information about maternal lineage ancestry i.e., information about the "line of mothers" (the mother of the mother of the mother etc.) of an individual. Mitochondrial DNA testing can also provide information about (biogeographical) ancestry, but only as it relates to an individual's maternal lineage of the mitochondrial chromosome.

1.2.2 Age inference

In this Report, age inference refers to the analysis of an unknown individual's DNA sample to probabilistically infer that individual's age.

Whilst other genetic tests have been used to infer lifetime age, those based on the analysis of DNA methylation patterns, otherwise known as epigenetic markers, have been shown to be the most reliable. DNA methylation (or the presence of a specific 'methyl' molecule on the DNA) regulates gene expression (whether a specific gene is active or not active), and an individual's DNA methylation pattern (i.e., which parts of their DNA are methylated and which are not) changes with age. Age prediction testing takes advantage of this, and analyses DNA methylation at those specific sites on the genome which have been correlated to change with age.

¹ Concerns about the very notion of genetic ancestry within the literature on ethical, social, and legal aspects of genomics will be published elsewhere.

² At conception mitochondria (and their DNA) are only present in the mother's egg (and not the father's sperm head that enters the egg and thus contributes to the genetic load of the offspring) and therefore it is only the mother's mitochondrial DNA which is passed to the children.

1.2.3 Appearance inference

In this Report, appearance inference refers to the genetic analysis of an unknown individual's DNA sample to probabilistically predict that individual's appearance i.e., their externally visible characteristics (EVCs). EVCs can be distinguished from a person's 'invisible' or 'hidden' traits, such as those related to a specific health condition or disease. Prediction tests for appearance normally involve SNP testing and examples of EVCs which have been used for FDP include eye colour, hair colour, and skin colour. Some practitioners and stakeholders consider EVCs as also encompassing ancestry and age.

1.3 Coding and non-coding regions of DNA

Coding regions of DNA are described as the parts of DNA which encode proteins and which can therefore provide information about an individual's phenotype (i.e., their observable characteristics). The remainder of DNA is often classified as "non-coding". Information about an individual's non-coding DNA is perceived to provide no information about a person's phenotype, and is therefore viewed as less ethically problematic.

During the development of DNA profiling technologies, this coding/non-coding distinction has served the purpose of an 'ethical boundary'. Profiling technologies that identify people based on STR markers, which are derived from non-coding regions of the DNA, are seen to not provide any information about an individual's observable characteristics. Identifying individuals in this way is therefore seen to be less ethically problematic than the use of coding DNA (in particular, but not only, with respect to privacy). In some jurisdictions, the distinction between coding and non-coding DNA is key to their forensic DNA legislation, which often limits legitimate analyses of DNA to 'non-coding' regions.

However, research carried out during the last decade or so has clearly demonstrated that there is coding information in the previously assumed non-coding part of the DNA, namely via regulatory (instead of protein-coding) function. Such DNA regulators interact with genes to switch genes off or on and therefore are of similar importance for the expression of a gene to coding variants within a gene. Scientific evidence has demonstrated that a considerable proportion of gene function variation is provided by regulatory DNA elements, which can be within genes, nearby genes or even distant to genes, and not only by protein-coding DNA variants within genes as had been assumed in the past. Moreover, there are instances in which a specific "non-coding" genetic marker is positioned close to a specific coding region, and analysis of the specific genetic marker can inform us about the coding region by very fact that the marker and the respective coding region are in close proximity. Portions of DNA in close proximity are often genetically linked, that is, inherited together, and so the presence of a specific SNP variant can be predictive of a specific observable trait. Indeed, a number of regulatory SNPs and SNPs in linkage disequilibrium with (currently unknown) coding SNPs are used to predict EVCs. For ancestry inference from DNA, mostly non-coding, but sometimes coding SNPs are used.

As such, the coding/non-coding distinction as it applies to what it can tell us about a person's observable characteristics is not binary.

1.4 FDP purpose and storage of FDP findings

1.4.1 FDP purpose

In current police and judicial practices, DNA profiling is used to ascertain the identity of a suspected perpetrator and can be used as evidence in court. FDP is different: rather than providing confirmatory evidence, the key utility of the technology is seen to be in an investigatory context i.e., as a probabilistic predictor of characteristics about an unknown person to aid as one part in a wider investigation to identify an individual.

Moreover, among experts working within the criminal justice system in EU member countries, there is wide agreement that whilst FDP findings in a criminal case need to remain in a case file as evidence, FDP findings would never need to be used as confirmation that a suspected perpetrator had committed a crime, since once arrested, the suspected perpetrators' DNA has to be confirmed against the original DNA sample found at a crime scene using "traditional" STR-based DNA analysis. Having said that, if the obtained statistical evidence is strong enough, FDP allows excluding suspects from having been the sample donor. It is the legal regulations relating to the investigatory purpose of FDP that are the focus of this Report.

1.4.2 FDP data storage

FDP data storage is only discussed in this Report insofar as it pertains to storing FDP findings in central national forensic DNA databases. Nearly all informants for this Report agreed that there is no value in storing FDP findings in a central national database, given the key utility of FDP being seen as an investigatory tool. To pre-empt discussions on the option of storing FDP information in central national DNA databases - as amendments to STR-profiles, or as DNA information in their own right - we include some aspects relevant to this scenario in our discussions.

In principle, there are four possible ways of 'storing' FDP:

- a) storing the computerised genetic data used for narrative description of the phenotypic prediction in the lab that carried out the analysis (decentral storage of DNA)
- b) storing the narrative description of the phenotypic prediction and/or the genetic data in the hard-copy or soft-copy case report (and thus wherever case reports are stored; decentral storage of narrative information)
- c) storing the narrative description of the phenotypic prediction in the central/national DNA database (central storage of DNA)
- d) storing the genetic data used for the narrative description of the phenotypic prediction in the central/national DNA database (central storage of narrative information)

Table 3: Examples of different types of storing FDP information. We found no support for central storage scenarios among the informants of this Report.

Storing	Genetic “raw” data	Narrative FDP information
Decentrally	A forensic lab in Bluetown, a small town in Greyland, carries out a SNP-based analysis on the DNA of an unknown perpetrator of a rape and murder case to probabalistically infer cues about the appearance (hair, skin and eye colour) and age of the man. The SNP and epigenetic data remains stored in a computer in the lab beyond the end of the investigation.	The lab of Bluetown informs police investigators of the probable likelihood that the perpetrator has blue eyes (80%) and is light-skinned (92%). They also state that it is probable that the unknown perpetrator is approximately 40-50 years (95%CI). This information remains stored, together with the rest of the case material, in the archives of the police force of Bluetown.
Centrally	SNP and epigenetic data, as well as subject information are added to the central DNA database of Greyland.	The unknown suspect is apprehended and STR analysis confirms them to be the perpetrator. The suspect is 31 years old. The Parliament of Greyland decides to issue a law that allows the storage of information on likely accelerated or delayed biological ageing as an additional subject-related data point in the central forensic database.

At present no countries store, or have seriously considered storing, FDP genetic data nor the narrative description of FDP findings in a national database.

FDP conducted on unidentified human remains for missing person investigations may be different. Here, there may be a rationale to store the narrative description from the FDP in a central database until the unidentified human remains have been linked to a missing person. Missing persons databases are separate to criminal forensic databases in some countries, but not others.

2. Methodology

This Report draws on information gathered from a range of interviews with stakeholders from the eight countries included in the Report. Interviews were conducted by the first author of this Report (GS). Interviews were carried out with forensic scientists, members of the police, representatives of government agencies, academic scholars, lawyers and scientists. Interviewees included members of the VISAGE consortium. Thirty-six interviews were conducted in total. Table 4 provides a breakdown of the number of participants we interviewed from different professions. Interviews were conducted in English via skype and digitally recorded for transcription. Where language was a barrier to audio interview, interview schedules were emailed to participants and responses given in written format. Ambiguities which arose during both types of interview were resolved via follow-up emails.

Table 4 Number of participants interviewed from different professions

Profession	Number of participants
STEM scientist (geneticist, statistician etc)	14
Social scientist	5
Government agency representative	8
Police representative	6
Academic lawyer	3

3. EU Law

3.1 Primary EU Law

Two key provisions of primary EU law are Articles 7 and 8 of the Charter of Fundamental Rights of the European Union (CRF), pertaining to privacy and to the protection of personal data:

Article 7: Respect for private and family life

Everyone has the right to respect for his or her private and family life, home and communications.

Article 8: Protection of personal data

1. Everyone has the right to the protection of personal data concerning him or her.
2. Such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law.
3. Everyone³ has the right of access to data which has been collected concerning him or her, and the right to have it rectified. Compliance with these rules shall be subject to control by an independent authority.

It is in the competence of the Court of Justice of the European Union (CJEU) to decide how these rights should be interpreted and applied.

The right to data protection specifically is also reflected in Article 16 of the Treaty of the Functioning of the European Union (TFEU 2007).⁴ In addition to that, the European Union also has a dedicated Data Protection regime, which is what we turn to next.

3.2 The General Data Protection Regulation (GDPR)

The European Union's (EU) data protection framework is undergoing a fundamental transition at the moment. The EU's general data protection regime so far has been in the form of a Directive,

³ The term "everyone" includes not only EU citizens but all natural persons.

⁴ 1. Everyone has the right to the protection of personal data concerning them.

2. The European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall lay down the rules relating to the protection of individuals with regard to the processing of personal data by Union institutions, bodies, offices and agencies, and by the Member States when carrying out activities which fall within the scope of Union law, and the rules relating to the free movement of such data. Compliance with these rules shall be subject to the control of independent authorities.

The rules adopted on the basis of this Article shall be without prejudice to the specific rules laid down in Article 39 of the Treaty on European Union.

meaning that EU member states had to “translate” the provisions of the Directive into national law (Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data). The new data protection regime - the General Data Protection Regulation (GDPR) which entered into force in 2016 and is applicable from May 2018 - takes the form of a Regulation, meaning that it is directly enforceable in all member countries, without requiring the “detour” of being transposed into national laws. An important reason for choosing this form of Regulation has been to achieve greater harmonisation of data protection standards across the EU. Having said this, EU member countries will still have some room for interpretation in how they define some central concepts, such as “public interest”, etc.

3.3 The Police Directive

For the purpose of collecting and storing information for police and forensic uses, a “lex specialis” to the more general EU Data Protection Directive entered into force in May 2016: The “Directive 2016/680 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purpose of law enforcement” (hereinafter Police Directive). It replaced the data protection rules based on the Framework Decision 2008/977/JHA for the police and criminal justice sector, with the aim of removing barriers to information exchange for law enforcement purposes between member countries by harmonising and simplifying rules. Member countries have until 6 May 2018 to translate the Directive into national law; they are allowed to require higher data protection standards than those prescribed in the Police Directive (but not lower ones).

It is also important to note upfront that both the GDPR and the Police Directive (in line with the EU’s data protection approach in general) pertains to the protection of “personal data”. Traditionally, within European data protection frameworks, the adjective “personal” has meant data that could be linked to a specific individual. The new GDPR, however, employs a definition of personal data that, according to some legal experts, renders virtually *all* data personal data (Purtova 2017).⁵ This would mean that the GDPR - and the Police Directive as a *lex specialis* - would apply to the processing of any kind of data, identified or non-identified.

The remit of the Police Directive is the processing of data of member countries’ competent authorities for the purpose of law enforcement nationally and across borders. This means that most of the activities in related to developing FDP technology - including preventing, investigating, detecting, and prosecuting criminal offences, and the safeguarding and prevention of threats to public security (when carried out by “competent authorities” - see below) - fall within the remit of the Police Directive and will continue to do so when the GDPR comes into effect in May 2018.

⁵ Purtova, N. (2017). The Law of Everything. Broad Concept of Personal Data and Overstretched Scope of EU Data Protection Law. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3036355. For a different assessment see Mourby, M., Mackey, E., Elliot, M., Gowans, H., Wallace, S.E., Bell, J., Smith, H., Aidinlis, S., and Kaye, J. (2018). Are ‘pseudonymised’ data always personal data? Implications of the GDPR for administrative data research in the UK. *Computer Law & Security Review* (in press).

Exempt from the remit of the Police Directive are activities by EU institutions and bodies (Europol, Eurojust, EPPO, EJM, and OLAF).

The dual nature of the EU “general” data protection framework on the one hand, and the special provisions for data processing for law enforcement purposes by competent authorities on the other, has pragmatic and historical reasons. As legal expert Nadya Purtova summarises, there has been “a pragmatic necessity to recognise special needs of the law enforcement authorities ... (e.g. under some circumstances it would harm the interests of a criminal investigation to inform a suspect of data collection), as well as by the pre-Lisbon pillar structure of the European Union, where law enforcement fell under the former third pillar and hence had to be treated separately” (Purtova 2017).⁶

It is important to note that in deciding whether GDPR or the Police Directive applies, not only the purpose of the data processing needs to be considered, but also whether the body processing data falls under the remit of “competent authorities” (Art 3.7 of the Police Directive). “Competent authorities” in this definition comprise (a) public authorities competent for the law-enforcement purposes set out in Article 1.1 of the Police Directive, and (b) “any other body or entity entrusted by national law to exercise public authority and public powers” for the law enforcement purposes set out in Art 1.1 (e.g. a privately owned company running a prison; see Purtova [2017]). When a body not meeting the “competent authority” criteria processes data for law enforcement purposes - such as a financial institution, at the order of a public authority - the GDPR, and not the Police Directive, applies (e.g. a financial institution processes personal data that a law enforcement authority has requested in connection with an open investigation).

It would go beyond the remit of this Report to provide a summary of the provisions of EU data protection regimes. Good overviews are available elsewhere.⁷ We will thus focus on the aspects where the Police Directive is different from the GDPR, either in remit or in terms of substantive provisions.

Important differences between the GDPR and the Police Directive lie in the grounds for lawful processing and in the powers of processing authorities. The grounds for lawful processing in the Police Directive are much more narrow than in the GDPR (see in particular Art. 8.2, and Art 10 Police Directive): “Competent authorities” processing for the purpose of law enforcement do have more leeway in how they use data than data controllers or processors within the GDPR. Correspondingly, the information rights of data subjects within the Police Directive are more limited

⁶ Purtova, Nadezhda. "Between GDPR and the Police Directive: Navigating Through the Maze of Information Sharing in Public-Private Partnerships." (2017).

⁷ Purtova, Nadezhda. "The Law of Everything. Broad Concept of Personal Data and Overstretched Scope of EU Data Protection Law." (2017); Townend, D. Implementation of the Data Protection Directive in relation to medical research in Europe. Routledge, 2017; Wachter, Sandra, Brent Mittelstadt, and Luciano Floridi. "Why a right to explanation of automated decision-making does not exist in the general data protection regulation." International Data Privacy Law 7, no. 2 (2017): 76-99; Yeung, Karen. "Making sense of the European data protection law tradition." Algorithmic Regulation (2017): 34.

than the information rights of data subjects under the GDPR regime (for details see also Purtova 2017).⁸

Specifically relevant in the context of phenotypic profiling are the following provisions:

(23) "Genetic data should be defined as personal data relating to the inherited or acquired genetic characteristics of a natural person which give unique information about the physiology or health of that natural person and which result from the analysis of a biological sample from the natural person in question, in particular chromosomal, deoxyribonucleic acid (DNA) or ribonucleic acid (RNA) analysis, or from the analysis of another element enabling equivalent information to be obtained. Considering the complexity and sensitivity of genetic information, there is a great risk of misuse and re-use for various purposes by the controller. Any discrimination based on genetic features should in principle be prohibited."

The latter sentence, namely that "discrimination based on genetic features should *in principle* be prohibited" (our emphasis) indicates that there needs to be a very strong public interest justification if discrimination based on genetic features is used. How strong this justification needs to be supposedly also hinges on the interpretation of the phrase "discrimination based on genetic features" in this context. If interpreted as *undue* genetic discrimination, that is, the use of genetic features in the distribution of rights and duties without a compelling reason - then (23) of the Police Directive does not conflict with the use of FDP *per se*. If the phrase is interpreted widely as an *in principle* prohibition of distinguishing between individuals on the basis of genetic features then this would render FDP illegal. This latter reading, however, would also render "traditional" STR-based DNA typing unlawful (as also STR-based profiling could be argued to lead to the distinction between individuals on the basis of genetic features), which we can assume is not the intention of the legislation.

Whereas the Police Directive does not distinguish between coding and non-coding DNA, it does include specific protections for personal health data:

(24): Personal data concerning health should include all data pertaining to the health status of a data subject which reveal information relating to the past, current or future physical or mental health status of the data subject. This includes information about the natural person collected in the course of the registration for, or the provision of, health care services as referred to in Directive 2011/24/EU of the European Parliament and of the Council to that natural person; a number, symbol or particular assigned to a natural person to uniquely identify the natural person for health purposes; information derived from the testing or examination of a body part or bodily substance, including from genetic data and biological

⁸ In a nutshell, whereas data subjects have a right to be informed (a) that their personal data is processed, (b) by whom and (c) for what purpose, as well as (d) about the right to lodge a complaint and have data corrected if necessary (this is in line with the GDPR), the provision of this information can be delayed, restricted or omitted if necessary (Art. 13-15 and [42-44] Police Directive; see appendix EU.1)

samples; and any information on, for example, a disease, disability, disease risk, medical history, clinical treatment or the physiological or biomedical state of the data subject independent of its source, for example from a physician or other health professional, a hospital, a medical device or an in vitro diagnostic test.

According to Provision (24), some data processed for FDP purposes would be subsumed under both genetic and health data, which both are given special protection under the Police Directive (Art. 10).⁹

Even more strongly than the GDPR, which grants data subjects certain rights in connection with predictive automated data processing (profiling), the Police Directive prohibits decisions fully based on automated processing (with exceptions; see Art. 11).¹⁰

Interestingly, the principles of Privacy by Design, and Privacy by Default, which are enshrined in the GDPR, are not explicitly listed in the Police Directive. However, experts argue that other provisions within the Directive are to be read in that spirit.¹¹ Moreover, the Working Party on Police and Justice - consisting of representatives of European data protection authorities - recommended following principles have been suggested to be respected:

1	Data minimisation	Data processing systems should be designed and selected in accordance with the aim of collecting, processing as little personal data as possible
2	Controllability	IT systems should provide data subjects with effective means of control concerning their personal data. Rights to consent and

⁹ Article 10. Processing of special categories of personal data. Processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation shall be allowed only where strictly necessary, subject to appropriate safeguards for the rights and freedoms of the data subject, and only:

- (a) where authorised by Union or Member State law;
- (b) to protect the vital interests of the data subject or of another natural person; or
- (c) where such processing relates to data which are manifestly made public by the data subject.

¹⁰ Article 11. Automated individual decision-making 1. Member States shall provide for a decision based solely on automated processing, including profiling, which produces an adverse legal effect concerning the data subject or significantly affects him or her, to be prohibited unless authorised by Union or Member State law to which the controller is subject and which provides appropriate safeguards for the rights and freedoms of the data subject, at least the right to obtain human intervention on the part of the controller. 2. Decisions referred to in paragraph 1 of this Article shall not be based on special categories of personal data referred to in Article 10, unless suitable measures to safeguard the data subject's rights and freedoms and legitimate interests are in place. 3. Profiling that results in discrimination against natural persons on the basis of special categories of personal data referred to in Article 10 shall be prohibited, in accordance with Union law.

¹¹ Working Party on Police and Justice; The Future of Privacy. Joint contribution to the consultation of the European Commission on the legal framework for the fundamental right to protection of personal data, adopted 1 December 2009. P13. See also Akintunde SE. 2017.: The Impact of Directive (EU) 2916/680 on the Processing of Personal Data by Competent Authorities for the Purposes of the Prevention, Investigation, Detection or Prosecution of Criminal Offences of the Execution of Criminal Penalties and on the Free Movement of Such Data on the Existing Privacy Regime. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2912449

		objection should be supported by technological means
3	Transparency	Developers and operators of IT systems must ensure that data subjects are sufficiently informed about the means of operation of the system. Electronic access and information options should be enabled
4	User friendly systems	Privacy-related functions and facilities should be user friendly, meaning they should provide sufficient help and simple interfaces to be used also with less experienced users
5	Data confidentiality	IT systems should be designed in such a way that only authorised entities have access to personal data
6	Data quality	Data controllers must support data quality by technical means. Relevant data should be accessible if needed for lawful purposes
7	Use limitation	IT systems which can be used for different purposes or are run in a multi-user environment have to guarantee that data and processes serving different tasks and purposes can be segregated from each other in a secure way

Table 5: Principles to be respected when implementing Privacy by Design and Privacy by Default; adapted from Akintunde 2017.

The Police Directive applies also in the United Kingdom (UK), but only where the UK has opted in to other laws on cross-border cooperation for law enforcement purposes, or when exchanging personal data with EU countries.

3.4 The Prüm framework

The so-called Prüm framework - whose core legislation is Council Decision 2008/616/JHA - requires that EU member countries make available the reference data from their national DNA analysis files to competent and authorised authorities in other member countries, but only those DNA profiles based on the non-coding part of DNA.¹² This means that only non-coding information may be exchanged transnationally within the Prüm framework. Given that the Prüm framework pertains to DNA data stored in national databases, which is “traditional” STR-information, it is not of immediate relevance to the development of an FDP tool.

¹² Art 2.c of Council Decision 2008/616/JHA defines a 'DNA profile' as 'a letter or number code which represents a set of identification characteristics of the non-coding part of an analysed human DNA sample, i.e. the particular molecular structure at the various DNA locations (loci)', and 2.d specifies further that “non-coding part of DNA” means chromosome regions not genetically expressed, i.e. not known to provide for any functional properties of an organism’. “Functional properties” could be interpreted as not related to ancestry-related markers.

In July 2013, the UK Government opted out of all police and criminal justice measures agreed before the Lisbon Treaty came into force on 1 December 2009. In 2015 the UK Parliament voted to join the Prüm regime and this was accepted by the EU in May 2016.

4. Austria

4.1 Introduction

Austria has been in the forefront of implementing new forensic DNA technologies.¹³ The Austrian approach towards storing and using DNA information has focused on collecting accurate information from suspected and convicted offenders rather than widening the range of people from whom DNA information is collected. The same applies to the purposes for which DNA information is used; Austria has been proactive in facilitating cross-national STR profiles for the identification of perpetrators of serious crimes (it was part of the initial signatories of the Prüm Treaty, see Section 2.4), but decision-makers and users in Austria are less open towards the idea of analysing DNA samples for other purposes than STR-based identification. Our interviews with experts and stakeholders in Austria largely supported this view, but some also noted that with the advance of forensic DNA technologies attitudes could change.

4.2 Relevant legislation

The Austrian legal system is based on the civil law tradition, which means that (with a few exceptions, mostly in international law) only codified law is recognised as a source of law. Jurisdiction (precedent) can unfold political influence but it is not systematically considered when interpreting norms. The legislation relevant to FDP is as follows:

- *Sicherheitspolizeigesetz* (The Security Police Act (SPG)), which provides the legal basis for the security authorities and the police. The SPG was adapted in 1999 to include regulations for the analysis of DNA for human identification. Relevant section §§ 64ff, in particular §67 on DNA examinations and §75 as a legal base for a national identification database including DNA information.
- *Strafprozessordnung* (Code of Criminal Procedure-StPO). Relevant section §§ 123/124 ff.
- [Austrian] EU-Police Cooperation Law (EU-POLKG), especially § 21, which describes the DNA markers permitted to be stored in the DNA national database in connection with the legal implementation of the EU Prüm Decisions (see Section 2.4)

¹³ Hindmarsh and Prainsack (2010) Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing. Chapter 8.

4.3 Regulation relating to the use of FDP

In the letter of the law there is some ambiguity as to whether FDP is permitted in Austria. Within the law, which focuses on the use of DNA information for identification purposes, and was issued in an era in which STR-based profiles were the norm, there is no mention of what techniques can be used for such identification. See the extracts below from the two relevant laws, which relate to the use of DNA for human identification, but do not seem to prohibit FDP (at least not according to the letter of the law). This is also the case because pertinent legislation and regulations in Austria focus mostly on the analysis of DNA taken from suspects, convicted offenders, or other subjects of interest, while they say little about what may be done with DNA obtained from crime scene samples (which is the material used for FDP and regulated specifically in §75.1a for all biometric and also biological crime scene stain database processing procedures).

Security Police Act (SPG) Section 67 (emphasis added by us):

(2) Genetic information obtained by identification measures¹⁴ may only be analysed for the purposes of the identification service. The molecular genetic examination is to be carried out by a service provider, to whom the entire material to be examined but not the identity data of the person concerned must be handed over.

(3) The law enforcement authorities shall stipulate that the service provider examines only those parts of the DNA that serve for identification and that the material to be examined is destroyed if the law enforcement authority is obliged to delete identification data.

Code of Criminal Procedure StPO § 124

To solve a crime it is permissible to carry out a molecular biological examination of the biological traces on the one hand, and the [biological] material likely to belong to a person on the other, in order to associate a trace to a person or to determine the identity or lineage ancestry of a person, and to compare [the results] with the results of molecular genetic examinations carried out according to this law, or according to the SPG.¹⁵

In sum, based on the pertinent legislation regulating the use of DNA in Austria it could be concluded that the use of FDP on crime scene samples - as long as the information is not stored centrally - is acceptable. Specifically, the wording of §67 (3) SPG (see above) does not prohibit the examination of coding regions. If coding regions were included in the markers used for identification then they could be used. What this paragraph of the law says is merely that service providers may only look at these markers for the purpose of identification, and not to infer

¹⁴ See Appendix A.1.1 for a more extensive translation of the SPG, including a definition of 'identification measures'

¹⁵ *Zur Aufklärung einer Straftat ist es zulässig, einerseits biologische Spuren und andererseits Material, das einer bestimmten Person zugehört oder zugehören dürfte, molekulargenetisch zu untersuchen, um die Spur einer Person zuzuordnen oder die Identität einer Person oder deren Abstammung festzustellen, und mit nach diesem Gesetz oder nach dem Sicherheitspolizeigesetz rechtmäßig gewonnenen Ergebnissen molekulargenetischer Untersuchungen abzugleichen.*

information particularly regarding disease risks etc. Neither does §124 (1) StPO (see above) seem to forbid the use of age, ancestry or appearance markers in the legal text itself.

Referring to relevant parliamentary materials accompanying the development of relevant legislation in Austria, however, the custodian of the Austrian DNA and biometric databases at the Ministry of the Interior, Reinhard Schmid, summarised that FDP can be considered forbidden in Austria at present even though a superficial reading of the legal provisions could suggest that FDP is allowed (as long as this information is not stored).¹⁶ In the words of Reinhard Schmid, “*especially §123(2)¹⁷ SPG {could be seen as allowing} an examination of people whose physical characteristics make them belong to an ‘individualisable group of people’, {and} such a group of people could be understood, for example, as people with brown hair and blue eyes. Contrary to this impression it is clear from the materials accompanying the drafting of the bill that characteristics to be used for such group stratification are not intended to be phenotypic biological characteristics but instead other characteristics relevant for criminal investigation such as geoprofiling, insights from witness statements, and other criteria that meaningfully restrict the group of people to be included in a mass screening*” (our translation). In this view, any analysis of coding DNA regions, regardless of whether it is derived from crime scene DNA or subject samples, is currently illegal in Austria.

Data protection

Austria has strict data regulation/privacy. It is based on EU regulation and also written into their constitutional law. Constitutional law has a high status by virtue of being hard to amend (it requires a two-thirds majority in Parliament, with at least half of the members present and voting)¹⁸. The police are not permitted to reveal DNA profile information even if requested by the civil courts. Strong punishments, including prison sentences, are enforced if data is misused.

According to §37(4) Data Protection Act (*Datenschutzgesetz*) 2000, the data protection office (*Datenschutzbehörde*) has the right to comment on any federal law bill that concerns important questions of data protection.

4.4 Situation regarding the use of FDP

In line with the understanding of the legal status quo by key actors, FDP is not currently used in Austria.

¹⁶ See Appendix A.1.2

¹⁷ §123(2) *Eine körperliche Untersuchung nach Abs. 1 Z 1 ist auch an Personen zulässig, die einem durch bestimmte Merkmale individualisierbaren Personenkreis angehören, wenn auf Grund bestimmter Tatsachen anzunehmen ist, dass sich der Täter in diesem Personenkreis befindet und die Aufklärung einer mit mehr als fünf Jahren Freiheitsstrafe bedrohten Straftat oder eines Verbrechens nach dem 10. Abschnitt des Strafgesetzbuches andernfalls wesentlich erschwert wäre.*

¹⁸ http://www.nyulawglobal.org/globalex/Austria.html#_4.2_Fundamental_Principles

4.4.1 Age

It is unclear whether age prediction is permitted - it is certainly not practiced. In line with the reasoning presented above, namely that DNA analysis is only allowed for non-coding regions (i.e., DNA analysis is not permitted for any other genetic analysis, including epigenetic analysis) and not for phenotypic biological characteristics (see above Section 1.3), key actors would consider it forbidden.

4.4.2 Ancestry

Mitochondrial DNA (whole mitochondrial DNA control region) and Y-STR DNA analyses are allowed and practiced, but not routinely, and only when maternal / paternal lineages are in question, but not explicitly for biogeographical ancestry.¹⁹

4.4.3 Appearance

It is unclear whether appearance prediction is permitted - it is certainly not practiced. In line with the reasoning presented above, namely that DNA analysis is only allowed for non-coding regions and not for phenotypic biological characteristics (see above Section 1.3), key actors would consider it forbidden.

4.5 Regulation of the storage of FDP findings in a national database

Only information on non-coding regions of DNA can be stored in the Austrian national DNA database, and therefore FDP findings are forbidden to be stored. This is also noted in the EU-Police Cooperation Law (EU-POLKG), which also describes the allowed data stock on the national database. EU-POLKG is the legal base for the national implementation of important EU Decisions, including the Prüm Decisions, in particular in regard to usable DNA and dactyloscopic database files to be accessible online by authorities of other EU countries.

§ 21 EU-POLKG

(1) The parts of the data processed by security authorities that include the DNA profiles of known persons (subject profiles) and the DNA profiles of unknown (open traces) constitute the DNA analysis file.

(2) DNA profiles according to (1) may only be stored in terms of a code of letters and numbers that represents a number of identity characteristics of non-coding parts of an analysed human molecular structure at different DNA loci. Within the coding part of the DNA no genetic information about functional characteristics of an organism may be

¹⁹ Standard procedures use the following markers: NGMSE (standard) and PRESX17 (17 loci) for STR; y-filer and PPY23 for Y-chromosomal DNA information.

contained. DNA-profiles may not include data on the basis of which a person can be identified directly.²⁰

4.5.1 Age

Only markers from non-coding regions of DNA are permitted to be stored in the national database. If we only look to the letter of the law, this could include the storage of age inference findings, at least for any methylation testing based in non-coding locations. However, if we look at the spirit of the law, and the reason legislators choose to only include non-coding regions (i.e., so that no disease-related information is stored), age prediction findings (which can potentially provide disease-related information by comparing chronological and biological age) are not permitted to be stored. The latter view is underscored by the fact that at the time of issuing the law, legislators were familiar only with STR-based profiling, and not any other type of DNA-based information that could be used for policing and forensic purposes.

4.5.2 Ancestry

Only markers from non-coding regions of DNA are permitted to be stored. Also here, it could, in theory, be argued that ancestry markers in non-coding regions of the genome could be stored in the database. Though, in the spirit of the law, which is to forbid the storage of DNA findings related to disease or personal/observable information, the storage of ancestry inference findings is forbidden in Austria. The Austrian database can, however, physically store Y-STR haplotypes, and some are there, but these are not stored on a regular basis, and are only used in rare cases (e.g. for serial sexual offences) when there are no other STR matches. All Y-chromosomal profiles in Austria do not meet the criteria for the Prüm DNA loading and match procedures and are not usable for Prüm online access.

4.5.3 Appearance

Only markers from non-coding regions of DNA are permitted to be stored. Although some appearance markers are non-coding and, according to the letter of the law could be stored in the database, this is not in line with the spirit of the law (as discussed in Sections 3.5.1 and 3.5.2). In practice appearance prediction testing is forbidden in Austria and findings are not currently stored.

4.6 Current policy discussions

Unlike in Germany, where there is a very lively debate on the possibility of legalising FDP (see Section 6.6), such public debate is absent in Austria. Existing discussions have been carried out

²⁰ (1) *Jener Teil der von den Sicherheitsbehörden gemäß § 75 SPG verarbeiteten Daten, die die DNA-Profile bestimmter Menschen (Personenprofile) und die DNA-Profile Unbekannter (offene Spuren) enthalten, stellt die DNA-Analysedatei dar.*

(2) *DNA-Profile gemäß Abs. 1 dürfen nur in Form eines Buchstaben- oder Zahlencodes, der eine Reihe von Identifikationsmerkmalen des nicht codierten Teiles einer analysierten menschlichen Molekularstruktur an den verschiedenen DNA-Loci abbildet, gespeichert werden, wobei im nicht codierten Teil der DNA keine genetischen Informationen über funktionale Eigenschaften eines Organismus enthalten sein dürfen. DNA-Profile dürfen keine Daten enthalten, auf Grund derer eine Person unmittelbar identifiziert werden kann.*

among professional experts, who have been reported to consider FDP a useful investigative tool in the future - but only in limited and specific serious cases and not for routine database processing, and only if all constitutional and legal rights and provisions are complied with. However, because it was deemed by some interviewees that so few cases in Austria (if any) can benefit from FDP, a change in regulation is not viewed as necessary at present. Such decisions were not related to cost, which has played only a minor role in the Austrian justice system so far. If the use of a specific investigative tool is legal and considered necessary to solve a crime then it will be employed even if the costs are very high. This situation is partly a result of the inquisitorial justice system in Austria where the criminal police, the prosecutor and the judge are all actively involved in determining material truth.

When asked what type of regulation he would deem most suitable if it was decided that FDP would be legalised, the custodian of the Austrian DNA and biometric databases at the Ministry of Interior, Reinhard Schmid, refers to the current regulation of intelligence-led mass screening. The latter requires initiation by the public prosecutor (*Staatsanwaltschaft*), approval by a court, and then an order by the public prosecutor again (StPO § 141-143).²¹ In the Austrian criminal justice system (which is inquisitorial, meaning that courts are actively involved in determining material truth, rather than being neutral arbiters), public prosecutors head preliminary proceedings; but for measures that interfere with fundamental rights of people, the approval of a court is required.

Reinhard Schmid also noted that it is his personal assessment that the possible usage of FDP for appearance, ancestry and age may not be seen as sensitive by the population as the use of FDP for disease-related characteristics. He notes that it will be crucial to assess the proportionality, and the compliance with human rights legislation, of the use of FDP for any purpose.

4.7 FDP for unidentified human remains

In Austria, the legislation which governs the use of forensic DNA technologies for unidentified human remains is the same as that governing criminal cases (see Appendix A.1.1 - Section 65a, 67(1a)).

²¹ Source: Interview with Dr Reinhard Schmid at the Ministry of the Interior.

4.8 Open questions

- It is ambiguous as to whether Parliament intended to prohibit the use of informative markers for traits that are visible to the naked eye (legislators seem to have used the term "non-coding" synonymously with "non-informative"). It could be argued that markers that only disclose what can be seen with a naked eye are not 'informative'.

5. France

5.1 Introduction

Until recently FDP was forbidden by law in France. This law was then put into question by a recent court case (2014). In this court case a Magistrate ordered FDP prediction for eye, hair and skin colour. The legality of this FDP request was then examined by the *Cour de Cassation* (France's high court: the final court for civil and criminal questions). The *Cour de Cassation* ruled that conducting FDP to determine probable predictions for eye, hair and skin was legal.

5.2 Relevant legislation

France belongs to a civil law system, meaning that (with a few exceptions), only codified law and not jurisdiction (precedents) are recognised sources of law. Legislation relevant to FDP can be found in the following:

- The *Code Civil*
- The *Criminal Code* (Penal code) - lists and describes various criminal breaches (crimes, offences, fines)
- The *Code de Procédure Pénale* - includes regulations pertaining to DNA databases (and more broadly, regulations regarding criminal procedures, such as how to conduct enquiries/trials etc)
- The *Code de Santé Publique* (public health code containing regulations on genetic testing for research)
- France's High Court decision of June 2014

5.3 Regulation relating to the use of FDP

Prior to 2014, FDP was considered forbidden in France. There are a number of relevant pieces of legislation which suggest this, which we describe below.

A. The *Code de la Recherche*

Article L-221-1 of the *Code de la Recherche* (Code of Research) states that the study of an individual's genetic material or DNA fingerprinting for research purposes is limited to what is stated in the *Code Civil* (articles 16-10 to 16-13) and the *Code de Santé Publique* (L. 1131-1 and 1131-4).

B. The Code de Santé Publique

The *Code de Santé Publique* provides little direction regarding the use of FDP, though it does refer to Article L1243-4 which states the need for: *'Any entity that keeps and prepares human tissues and cells in order to practice any commercial activity, for scientific purposes, included for genetic research, must hold an authorization delivered by the minister in charge of research, after consultation of the advisory committee on information processing in healthcare'*.²²

C. The Code Civil

Article 16-10 of the *Code Civil* states that *'the study of a person's genetic characteristics can solely be undertaken for medical purposes or if framed by a scientific research project. The person's express consent must be obtained'*.²³ DNA phenotyping is therefore legal but only for medical or scientific research purpose and with consent. This means that FDP is not permitted because consent cannot be received.

Whilst Article 16-10 forbids the use of FDP, the Code distinguishes between DNA phenotyping for research purposes (regulated in Article 16.10) and the use of genetic fingerprinting for individual identification, which is regulated in Article 16-11. Article 16.11 states:²⁴

The identification of a person's genetic fingerprints may be sought only:

- 1) If in the context of a legal inquiry or as instructed by a legal proceeding
- 2) For medical purposes or if framed by a scientific research project
- 3) As to establish, when unknown, the identity of deceased persons

²² *Tout organisme qui assure la conservation et la préparation de tissus et cellules du corps humain en vue de leur cession dans le cadre d'une activité commerciale, pour un usage scientifique, y compris à des fins de recherche génétique, doit être titulaire d'une autorisation délivrée par le ministre chargé de la recherche, après avis du comité consultatif sur le traitement de l'information en matière de recherche dans le domaine de la santé, prévu à l'article 40-2 de la loi n° 78-17 du 6 janvier 1978 précitée. Une autorisation doit être obtenue dans les mêmes conditions par tout organisme qui assure la conservation et la préparation de tissus et cellules du corps humain en vue de leur cession à titre gratuit pour un usage scientifique. Lorsque l'organisme est un établissement de santé, l'autorisation est délivrée de manière conjointe par le ministre chargé de la recherche et le directeur de l'agence régionale de l'hospitalisation territorialement compétent. Les dispositions du présent article sont applicables aux organismes assurant des activités de conservation et de préparation des organes, du sang, de ses composants et de ses produits dérivés.*

²³ *L'examen des caractéristiques génétiques d'une personne ne peut être entrepris qu'à des fins médicales ou de recherche scientifique.*

Le consentement exprès de la personne doit être recueilli par écrit préalablement à la réalisation de l'examen, après qu'elle a été dûment informée de sa nature et de sa finalité. Le consentement mentionne la finalité de l'examen. Il est révoquant sans forme et à tout moment.

²⁴ *L'identification d'une personne par ses empreintes génétiques ne peut être recherchée que :*

- 1° *Dans le cadre de mesures d'enquête ou d'instruction diligentées lors d'une procédure judiciaire ;*
- 2° *A des fins médicales ou de recherche scientifique ;*
- 3° *Aux fins d'établir, lorsqu'elle est inconnue, l'identité de personnes décédées.*

Disagreements remain about whether the wording of this particular Article strictly prohibits the use of FDP or leads to ambiguity. The ambiguity seems to stem from how 'identification' is interpreted, and whether the 'identification' that could be sought for a legal inquiry could use FDP, or whether it refers to only non-coding elements of the DNA.

D. The Penal code

The Penal Code contains the penalty for conducting prohibited genetic analyses as they relate to Article 16.10:

Article 226-25: Proceeding to the study of a person's genetic characteristics for other purposes than medical or scientific, or for medical or scientific purposes without having obtained her consent beforehand under Article 16-10 of the Civil Code, is punishable by a one-year prison sentence and a 15.000 euros fine.

Article 226-26: Diverting from their medical or scientific purposes the information collected on someone from the study of their genetic characteristics is punishable by a one-year prison sentence and a 15.000 euros fine.²⁵

The Code does not seem to impose a penalty for a genetic analysis prohibited by Article 16.11.

E. Circular

In addition to the above legislation, the Constitutional Council (the highest constitutional authority in France, one of whom's roles involves the interpretation of legislation) had previously disseminated a Circular²⁶ (CRIM-PJ N°08-28.H5 tome 4 (june 2011)) to French Magistrates pronouncing that police must not use FDP in criminal cases (see Appendix A.2.1). This followed a private laboratory asking the authorities for such permission, and the Magistrate refusing.

F. Court Case

In spite of the above Circular, during a recent court case of a (later convicted) serial rapist in Lyon, the Magistrate (the investigative judge who, in inquisitorial legal systems such as France, carries out pre-trial investigations and in some cases makes a recommendation for prosecution) ordered DNA phenotyping for eye, hair and skin colour on the sperm sample. This Magistrate then checked if his request was legal, realised it was not, and started to erase the order. During this procedure, the status of the legality of the request was examined by the *Cour de Cassation* (France's High

²⁵ Article 226-25

Modifié par Loi n°2004-800 du 6 août 2004 - art. 4 JORF 7 août 2004

Le fait de procéder à l'examen des caractéristiques génétiques d'une personne à des fins autres que médicales ou de recherche scientifique, ou à des fins médicales ou de recherche scientifique, sans avoir recueilli préalablement son consentement dans les conditions prévues par l'article 16-10 du code civil, est puni d'un an d'emprisonnement et de 15 000 euros d'amende.

Article 226-26

Modifié par Loi n°2004-800 du 6 août 2004 - art. 4 JORF 7 août 2004

Le fait de détourner de leurs finalités médicales ou de recherche scientifique les informations recueillies sur une personne au moyen de l'examen de ses caractéristiques génétiques est puni d'un an d'emprisonnement et de 15 000 euros d'amende.

²⁶ A Circular is a statutory Act by the Minister of Justice.

Court - the final court for civil and criminal questions). This court has the authority to rule only on the legality of judgment, but not on the case itself: its purpose is only to ensure the uniform interpretation of the law. As such, this authority is to serve only as a point of reference for all courts 'by authority of their reason' and not 'by reason of their authority' as compared with the binding nature of courts in adversarial systems regulated by common law.²⁷

The court's decision is called *Arrêt n° 3280 de la cour de cassation* (25 June 2014). As shown in the court decision below, the court decided against the previous Circular, ruling that pigmentation markers could be used to predict eye, hair and skin colour in the trial of the serial rapist in Lyon. This was on the understanding that since there was no attempt to identify disease, the issue should not be considered under Article 16.10, and because the analysis used DNA which was previously naturally detached from the person, this was in compliance with *Code Civil* 16.11 - which makes provisions to respect and protect the human body (i.e. a trace is not part of body integrity). We note here that we have not been able to identify the section of Article 16.11 which talks about respect and protection of the human body. *The Arrêt n° 3280 de la cour de cassation* (25 June 2014) stated as follows:²⁸

Following the request made to the Court of Appeal, acknowledging the violation of articles 16-10 and 16-11 of the Civil Code, 226-26 of the Criminal Code and 706-54 and following the code of criminal procedure;

The legal inquiry expected that a case be made against a person on charges of rape; given that the biological traces collected on two victims failed to identify the perpetrator by his genetic fingerprints, the examining Magistrate requested a second appraisal to be carried out as to study the aforementioned traces in order to extract essential DNA data thereby revealing relevant information about the suspect's morphological appearance;

The examining Magistrate appealed to the Investigation Chamber and requested his previous decision to be voided under Articles 16-11 of the Civil Code and 226-25 of the Criminal Code;

²⁷ <http://www.ritsumei.ac.jp/acd/cg/law/lex/r/r28/CADIET3.pdf>

²⁸ *Sur le moyen unique de cassation, pris de la violation des articles 16-10 et 16-11 du code civil, 226-26 du code pénal et 706-54 et suivants du code de procédure pénale ;*

Attendu qu'il résulte de l'arrêt attaqué et des pièces de la procédure qu'une information a été ouverte contre personne non dénommée du chef de viols aggravés ; que les traces biologiques relevées sur deux des victimes n'ayant pas permis l'identification de l'auteur des faits par ses empreintes génétiques, le juge d'instruction a ordonné une expertise tendant à l'analyse de ces traces afin que soient extraites les données essentielles à partir de l'ADN et fournis tous renseignements utiles relatifs au caractère morphologique apparent du suspect ;

Attendu que le juge d'instruction a saisi la chambre de l'instruction d'une requête en annulation de sa propre décision au regard des articles 16-11 du code civil et 226-25 du code pénal ;

Attendu que, pour rejeter la requête, l'arrêt, après avoir relevé que le juge d'instruction avait confié à l'expert mission de déterminer des caractéristiques génétiques à partir d'un matériel biologique s'étant naturellement détaché du corps humain, retient que les articles 16-10 et 16-11 du code civil n'ont pas vocation à s'appliquer, dès lors qu'ils ont pour seul fondement le respect et la protection du corps humain ; que les juges ajoutent qu'il en est de même de l'article 226-25 du code pénal, inséré dans ledit code par la loi no 94-653 du 29 juillet 1994 relative au respect du corps humain ;

Attendu qu'en cet état, et dès lors que l'expertise ordonnée par le magistrat instructeur sur le fondement de l'article 81 du code de procédure pénale consistait exclusivement à révéler les caractères morphologiques apparents de l'auteur inconnu d'un crime à partir de l'ADN que celui-ci avait laissé sur les lieux, à seule fin de faciliter son identification, l'arrêt n'encourt pas la censure ;

The court, knowing the examining Magistrate gave an expert the mission of determining the genetic characteristics from a biological element that had naturally detached itself from the human body, concludes Articles 16-10 and 16-11 of the Civil Code are not applicable, for they solely imply the respect and protection of the human body; the judges add the same reasoning applies to Article 226-25 of the Criminal Code, inserted in the aforementioned Code by Law n°94-653 dated July 29, 1994 relative to the respect of the human body; Since the expertise requested by the examining Magistrate under Article 81 of the Code of Criminal Procedure solely consisted in revealing the morphological characters of an unknown perpetrator from DNA samples he left on the crime scene, at the only purpose of facilitating his identification, the appeal is not liable to censure

This court decision, by interpreting the law, can be seen to give a legal basis to perform FDP in criminal cases for morphological characteristics (external physical appearance traits), including (but not necessarily limited to) hair, eye and skin colour. The legal basis for ancestry inference is still ambiguous with some experts taking the view it is illegal, and others arguing that it is legal. It seems that this is based on how 'morphological characteristics' are being defined.

5.4 Situation regarding the use of FDP

As per the case in inquisitorial legal systems in which the investigative Magistrate and/or public prosecutors are responsible for a criminal investigation, FDP is conducted in France with the instruction of a court order (a '*Juge d'Instruction*'). However, in addition to this, if the case is very recent (a '*flagrance*') and before it is instructed by a Magistrate, the police (or *Gendarmerie*) force can request FDP.

Different private and public laboratories conduct FDP in France and many specific traits are analysed. For example, the National Institute of Scientific Police (*Institut National De Police Scientifique*) conduct FDP analyses for eye colour, hair colour, skin colour, freckle prediction, baldness prediction and ancestry (the legal basis for ancestry inference, as discussed above, is however ambiguous). The Institute only uses FDP when there is no matching database profile, and only for serious cases (for example, murder, rape). They have been using FDP for about 10-15 cases a year since 2014 (out of a total of 220,000 samples analysed per year). And in terms of ancestry, 37 casework cases were conducted in the past 3 years. Examples of the successful use of FDP include ruling out some DNA in a burglary case and finding a perpetrator in a case in which body remains were found in a wall. Besides this, there has been little feedback from the police as to how useful FDP probabilistic predictions have been.

5.4.1 Age

The use of FDP for age prediction is ambiguous in French regulation. Whilst the ruling of the 2014 court case was in response to FDP which had been conducted for eye, hair and skin colour, the

exact words of the court's ruling state the legality of FDP for 'morphological characteristics'. It is an open question as to whether age could be considered a 'morphological characteristic'.

5.4.2 Ancestry

As discussed above, the use of FDP for predictive ancestry inference is ambiguous in French regulation. Whilst the ruling of the 2014 court case was in response to FDP which had been conducted for eye, hair and skin colour, the exact words of the court's ruling state the legality of FDP for 'morphological characteristics'. It is an open question as to whether an individual's ancestry can be considered a morphological characteristic. Either way, for some it is, and ancestry inference is certainly practiced by at least some entities.

5.4.3 Appearance

The use of FDP for appearance is interpreted as being permitted in France as per the ruling of the court case described above. Whilst the ruling of the 2014 court case was in response to FDP which had been conducted for eye, hair and skin colour, the exact words of the court's ruling state the legality of FDP for 'morphological characteristics'. It is an open question as to which EVCs can be defined as morphological characteristics. Either way, for at least some entities a broad definition is used, and appearance prediction testing for a wide range of characteristics occurs in France, as discussed above.

5.5 Regulation of the storage of FDP findings in a national database

The *Code de Procédure Pénale* (Article 706-54; see Appendix A.2.2 for French text) contains information about how the French national DNA database is organised and which markers are permitted to be stored. The specific list of DNA markers can be found in the Appendix A.2.3. It includes only autosomal non-coding markers, except the amelogenin (sex) marker. As such, FDP findings are not permitted to be stored.

5.5.1 Age

In the *Code de Procédure Pénale* (Article 706-54) there is explicit legislation stating that only non-coding DNA can be stored in the national database, as such age prediction findings are not permitted to be stored here.

5.5.2 Ancestry

In the *Code de Procédure Pénale* (Article 706-54) there is explicit legislation stating that only non-coding DNA can be stored in the national database. Moreover, this legislation lists the specific markers which can be stored in the database. No additional markers are permitted to be stored. As such, ancestry inference findings cannot be stored in the national database.

5.5.3 Appearance

In the *Code de Procédure Pénale* (Article 706-54) there is explicit legislation stating that only non-coding DNA can be stored in the national database. Moreover, this legislation lists the specific markers which can be stored in the database. No additional markers are permitted to be stored. As such, appearance inference findings are not permitted to be stored here.

5.6 Current policy discussions

The court decision of 2014 leaves FDP in legally ambiguous territory. At the moment, policy discussions are underway to try and resolve the situation, and there are many who are both pushing for and disagreeing with the use of FDP.

In January 2015, a Member of Parliament (Philippe Goujon) asked a question at the National Assembly about DNA phenotyping (Question N° 73053). Mr Philippe Goujon drew the attention of the Minister of Justice to the judgment of 25 June 2014 by the Court of Cassation, which seems to have recognised the legality of FDP in forensic investigations. He wanted to know what plans were being developed to accompany the use of these new investigative techniques with a legislative framework. The answer came from the Minister of Justice on September 2016.

By a judgment of 25 June 2014, the Criminal Division of the Court of Cassation admitted the legality of a genetic expert's report for the purpose of determining the apparent morphological features, thereby reversing the terms of the dispatch broadcast by the Directorate of Criminal Affairs and Pardons on 29 June 2011. The services of the Ministry of Justice, in conjunction with those of the Ministry of the Interior and Health, are currently determining the contours of a possible legal framework for this technique. Due to the sensitivity of these analyzes, it may be appropriate to determine precisely the legal framework and conditions for their use, as well as the persons authorized to do so, and to define employment doctrine their interest in the investigation and their cost. In this context, and taking into account the ethical issues involved, the Ministry of Justice has consulted the National Consultative Commission on Human Rights (CNCDH [Commission Nationale consultative des Droits de l'homme]) and the National Consultative Ethics Committee (CNCE) for its opinion. If the CNCDH has already given its opinion, the Ministry of Justice remains waiting for that of the CNCE. Upon receipt, a position will be stopped.²⁹

The CNCDH's opinion stated that there is no reason to forbid this kind of analysis in criminal cases, but asked that a precise legal infrastructure is created to determine which characteristics could be examined legally, and which should not, and if this type of analysis should only be used in certain types of criminal cases.³⁰

²⁹https://www.courdecassation.fr/jurisprudence_2/chambre_criminelle_578/3280_25_29571.html

³⁰ http://www.cncdh.fr/sites/default/files/16.03.17_avis_portrait-robot_genetique_3.pdf

The CNCE is yet to provide their opinion.

5.7 FDP for unidentified human remains

In France, regulation relating to unidentified human remains is governed under the same regulation as criminal cases, and are referred to in Article 16.11 (see Section 2.3).

5.8 Open questions

- There is need for legal clarity regarding the regulatory situation of FDP in France. This is because at present the legislation, which has been interpreted as forbidding FDP, sits contrary to the *Cour de Cassation's* 2014 ruling, which permits FDP.
- The *Cour de Cassation* determined that 'morphological characteristics' can be examined by FDP, but does not define these characteristics. It is therefore ambiguous whether the court's judgment only relates to FDP prediction testing for hair, skin and eye colour (the characteristics originally tested for in the Lyon rape case) or whether it allows for other characteristics to be tested for, such as ancestry.
- The *Cour de Cassation* concludes that the Civil Code Articles 16-10 and 16-11 are not applicable to FDP regulation because these Articles only relate to issues pertaining to respect and protection of the human body. This is confusing because we cannot identify anything in the legal text that suggests this.

6. Germany

6.1 Introduction

German policymakers are overall cautious about the use of genetic technologies in any context. Public debate tends to be critical of the use of genetic technologies in connection with humans even in the medical domain and especially outside of it. FDP is currently forbidden in Germany for criminal cases, though is carried out in some states for unidentified human remains. There are currently many ongoing policy discussions relating to the possible introduction of FDP. In particular, there is much disagreement about whether biogeographical ancestry inference should be permitted because it is seen as particularly sensitive and problematic in the German context.

6.2 Relevant legislation

Germany has a traditional civil law system. The main sources of law are the German constitution and codified law passed by Federal government. In terms of FDP, the relevant legislations are:

- German Code of Criminal Procedure (*Strafprozessordnung*; StPO): sections 81a-81h for criminal cases; section 88 for missing person cases
- Directive on the establishment of the DNA database (*Errichtungsanordnung DNA-Analyse-Datei*)
- Federal Criminal Police Office Act (*Bundeskriminalamtgesetz*, BKAG)³¹

6.3 Regulation relating to the use of FDP

At present, Section 81 of the German Code of Criminal Procedure³² is the core piece of legislation regulating the use of DNA analyses for forensic purposes. In particular, Section 81e states that no DNA analysis, bar that relating to ‘gender’ (this is the term used in the official English legal texts, and so we use it here, but understand that the translation is more accurately biological sex), descent (i.e. lineage ancestry), or the need to match the offender, is permitted.

³¹ https://www.gesetze-im-internet.de/bkag_1997/

³² https://www.gesetze-im-internet.de/englisch_stpo/englisch_stpo.html

Section 81e

[Molecular and Genetic Examinations]

(1) Material obtained by measures pursuant to Section 81a subsection (1) may also be subjected to molecular and genetic examinations, insofar as such measures are necessary to establish descent or to ascertain whether traces found originate from the accused or the aggrieved person; in so doing the gender of the person may also be determined by examination. Examinations pursuant to the first sentence shall also be admissible to obtain similar findings on material obtained by measures pursuant to Section 81c. Findings on facts other than those referred to in the first sentence shall not be made; examinations designed to establish such facts shall be inadmissible.

(2) Examinations admissible pursuant to subsection (1) may also be carried out on trace materials which have been found, secured or seized. Subsection (1), third sentence, and Section 81a subsection (3), first part of the sentence, shall apply mutatis mutandis.

Section 81g

[DNA Analysis]

(2) The cell tissue collected may be used only for the molecular and genetic examination referred to in subsection (1); it shall be destroyed without delay once it is no longer required for that purpose. Information other than that required in order to establish the DNA profile or the gender may not be ascertained during the examination; tests to establish such information shall be inadmissible.

As is common in such situations, the interpretation of the law on DNA testing is helped by the consideration of accompanying and other contextual materials.³³ For example, the decision by the Federal Constitutional Court referring to non-coding DNA analysis, paragraph 48³⁴, which states:

³³ <http://dipbt.bundestag.de/extrakt/ba/WP18/788/78842.html>

³⁴ a) *Der absolut geschützte Kernbereich der Persönlichkeit (vgl. BVerfGE 34, 238 <245>; 80, 367 <373 f.> m.w.N.), in den auch aufgrund eines Gesetzes nicht eingegriffen werden dürfte, ist nicht betroffen. Dies gilt jedenfalls, solange sich die Eingriffsermächtigung nur auf den nicht-codierenden, zu etwa 30 % aus Wiederholungseinheiten bestehenden Anteil der DNA bezieht (vgl. Beschluss der 2. Kammer des Zweiten Senats des Bundesverfassungsgerichts vom 2. August 1996 - 2 BvR 1511/96 -, NJW 1996, S. 3071 <3072 f.>; s.a. Benfer, StV 1999, S. 402 <403>), ausschließlich die Feststellung des DNA-Identifizierungsmusters zum Zweck der Identitätsfeststellung in künftigen Strafverfahren vorgenommen und das Genmaterial nach der Feststellung des DNA-Identifizierungsmusters vernichtet wird. Die mit Hilfe des allein festgestellten und gespeicherten DNA-Identifizierungsmusters erreichbare Code-Individualität wird in forensischer Sicht am besten durch ihre Nähe zum Daktylogramm verdeutlicht. Durch dessen Bestimmung und Speicherung wird der Kernbereich der Persönlichkeit nicht betroffen. Dafür ist nicht von Belang, dass der mit dem "genetischen Fingerabdruck" erreichbare Beweiswert denjenigen des herkömmlichen Fingerabdrucks und serologischer Verfahren ("biochemischer Fingerabdruck") sowie anderer Identifikationsmethoden weit übertrifft (vgl. zum Beweiswert näher Schmitter in: Vordermayer/von Heintschel-Heinegg, Handbuch für den Staatsanwalt, 2000, Teil A Kap. 5 Rn. 7 ff.) und der Vergleich von DNA-Identifizierungsmustern für die Praxis erhebliche technische Vorteile bei der Spurenuntersuchung bietet (vgl. Burr, Das DNA-Profil im Strafverfahren unter Berücksichtigung der Rechtsentwicklung in den USA <1995>, S. 40 ff.; Foldenauer, Genanalyse im Strafverfahren <1995>, S. 21 ff., 38 ff.; Kopf, Selbstbelastungsfreiheit und Genomanalysen im Strafverfahren <1999>, S. 69 ff.; Messer/Siebenbürger in: Vordermayer/von Heintschel-Heinegg, Handbuch a.a.O., Teil A Kap. 1 Rn. 127). Entscheidend ist, dass durch die Feststellung des DNA-Identifizierungsmusters anhand des Probenmaterials, das gemäß § 81g Abs. 2 StPO anschließend zu vernichten ist, Rückschlüsse auf persönlichkeitsrelevante Merkmale wie Erbanlagen, Charaktereigenschaften oder Krankheiten des*

The absolutely protected domain of personal rights, in which even action with a legal basis must not interfere with is not affected. This is the case as long as the permission to act pertains only to the 30% of the DNA consisting of non-coding repeating elements, and as long as the DNA pattern is used solely to establish the DNA profile of a person with view of future criminal proceedings, and the genetic material is discarded upon the determination of (a person's) DNA-profile. From a forensic perspective, the individual nature of the DNA code is best compared to a fingerprint. Through the establishment and storage of a fingerprint the core domain of personality rights is not affected. From this perspective it is not relevant that the evidentiary value obtained with a "genetic fingerprint" clearly outperforms that of traditional fingerprints, serological procedures ("biochemical fingerprint"), as well as other methods of identification. Neither does it matter in this context that the comparison of DNA identification patterns has considerable technical advantages in the examination of traces. The decisive factor is solely that through the establishment of the DNA identification pattern from the sample, which according to §81g(2) StPO needs to be discarded thereafter, inferences regarding characteristics relevant to personality such as heritable traits, character traits, or diseases of the affected person, i.e. a profile of her/his personality, is not possible.

We do note here that this extract perceives non-coding repeating regions of DNA (STRs) as only providing identifying information akin to a fingerprint, whereas in reality some ancestry information can be predicted from these areas of the DNA. Either way, this does not affect the fact that FDP is prohibited in Germany.

Section 81h of the German Code of Criminal Procedure also states that FDP information cannot be used as a criterion to define the target population in dragnets (where police ask citizens to volunteer DNA samples to aid in investigations where DNA evidence is collected from the crime scene but no known suspect has been identified). Familial searching can, however, be used for this purpose following an amendment of this section in 2017).³⁵

6.4 Situation regarding use of FDP

6.4.1 Age

There is explicit regulation in Section 81 of the German Code of Criminal Procedure stating that only DNA analyses relating to biological sex, descent or the need to match the offender are permitted, as such FDP for age inference is not permitted in Germany.

Betroffenen, also ein Persönlichkeitsprofil, nicht ermöglicht werden (vgl. BTDrucks 13/10791, S. 5; Rath/Brinkmann, NJW 1999, S. 2697 <2699 f.>; Markwardt/Brodersen, NJW 2000, S. 692 ff.).

³⁵ <https://dejure.org/gesetze/StPO/81h.html>

6.4.2 Ancestry

There is explicit regulation in Section 81 of the German Code of Criminal Procedure stating that only DNA analyses relating to biological sex, descent or the need to match the offender are permitted, as such FDP for ancestry inference is not permitted in Germany.

6.4.3 Appearance

There is explicit regulation in Section 81 of the German Code of Criminal Procedure stating that only DNA analyses relating to biological sex, descent or the need to match the offender are permitted, as such FDP for appearance inference is not permitted in Germany.

6.5 Regulation of the storage of FDP findings in a national database

Section 81g of the German Code of Criminal Procedure regulates the collection of a genetic sample from an accused person “*for the purposes of establishing identity in future criminal proceedings*” (subsection 1), and allows that “*the data collected may be stored at the Federal Criminal Police Office and used in accordance with the Federal Criminal Police Office Act*” (subsection 5). Only certain STR markers can be stored in the national DNA database (*DNA-Analyse-Datei*, DAD).³⁶ The list of these markers is not written into law, but rather subject to regulations issued by the Federal Criminal Police Office (*Bundeskriminalamt*, BKA), the institution responsible for operating the database. These regulations are based on the EU Council decision 15870/09³⁷ which defines the DNA profiling European Standard Set (ESS) of loci markers (as stated by the European Network of Forensic Science Institutes (ENFSI) DNA Working Group) which should be stored in different countries’ databases for comparative purposes. The DNA database stores all 12 of these markers, as well as the additional Amelogenin, D2S1338, D16S539, D19S433 and SE33 makers.

6.5.1 Age

There is an explicit law stating that only non-coding regions of DNA may be analysed “*for the purposes of establishing the DNA profile or the gender*” (§81g, sect. 1), and that only such data may be stored in the German national database. As such, age inference findings cannot be stored.

6.5.2 Ancestry

There is an explicit law stating that only non-coding regions of DNA may be analysed “*for the purposes of establishing the DNA profile or the gender*” (§81g, sect. 1), and that only such data may be stored in the German national database. As such, ancestry inference findings cannot be stored.

³⁶https://www.bka.de/DE/UnsereAufgaben/Ermittlungsunterstuetzung/DNA-Analyse/DNAstatistik/dnaStatistik_node.html

³⁷ <http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2015870%202009%20INIT>

6.5.3 Appearance

There is an explicit law stating that only non-coding regions of DNA may be analysed “for the purposes of establishing the DNA profile or the gender” (§81g, sect. 1), and that only such data may be stored in the German national database. As such, appearance inference findings cannot be stored.

6.6 Current policy discussions

At present, there are extensive debates with regards to proposed legislative plans to permit the identification of certain externally visible traits (EVCs), age and “biogeographical ancestry” in Germany. In order to achieve this, §81e of the StPO would need to be changed. This law currently states that any tests beyond those that determine an identification profile (*Identifizierungsmuster*), or information about descent or biological sex, are forbidden. Constitutional court rulings have interpreted this as meaning that only “non-coding” parts of the DNA can be used for these tests. The identification profile can then be compared to DNA profiles from the national database or to profiles obtained from volunteers in intelligence-led mass screenings.

Following a high-profile murder case, in February 2017 the state of Baden-Württemberg submitted a law proposal to the *Bundesrat* (the Chamber in the German Parliament that represents Germany’s states) with the aim of expanding the legal remit of DNA analysis to coding parts of the DNA.³⁸ The proposed change to the law would allow gene-coding regions to be analysed to check for hair, skin and eye colour, and biological age. Bavaria has also pushed for the inclusion of biogeographical ancestry.³⁹ This proposal was discussed at a conference of the Justice Ministers of all German states in March 2017, but no decision has been reached to-date; a motion by the State of Baden-Württemberg to decide on the law proposal at the end of March 2017 did not find a majority in the *Bundesrat*. In early 2018 the coalition parties forming the new German government included the expansion of DNA analysis to “external characteristics (hair, eyes, skin colour) as well as age” as a programmatic goal,⁴⁰ and the CSU party Bavaria is currently proposing to expand the competences of the police forces in their *Land* to allow DNA testing for age-, skin-, and haircolour, age, and biogeographical ancestry in specific circumstances.⁴¹ These proposals have been met with pronounced criticism and accusations to undermine human rights protections from various stakeholders inside and outside of Germany.

There have also been a range of symposiums and workshops to discuss and debate the possibility of permitting FDP/ancestry inference in Germany. For example, those organised by the Ministry of

³⁸https://www.bundesrat.de/SharedDocs/drucksachen/2017/0101-0200/117-17.pdf;jsessionid=61C665A475456187A5A3E1260443FEAD.1_cid382?__blob=publicationFile&v=5

³⁹dipbt.bundestag.de/dip21/brp/953.pdf see TOP 96, p. 20-22.

⁴⁰ Coalition agreement Feb 2018: <http://www.zeit.de/politik/deutschland/2018-02/grosse-koalition-koalitionsvertrag-spd-cdu-csu> (in German; our translation).

⁴¹https://www.bayern.landtag.de/www/ElanTextAblage_WP17/Drucksachen/Basisdrucksachen/0000013000/0000013038.pdf.

Justice (March 2017) and the University of Lübeck/Kiel (Legal Medicine; December 2017). Other key players of the debates include Veronika and Anna Lipphardt. Their group, which also includes geneticists and biostatisticians, have produced working papers and various other literatures exploring the social and ethical concerns about the technology,⁴² in addition to critically scrutinising the technology itself.⁴³ The German Stain Commission, as well as the board of the German Society for Legal Medicine in conjunction with the Working Group of Academic Forensic Geneticists, have also produced expert opinions about FDP, arguing that this technology is a meaningful expansion of forensic methods as long as an appropriate regulatory framework protects against misuse.⁴⁴

6.7 FDP for unidentified human remains

Legal norms regarding the establishment of the identity of unidentified human remains can be found in federal and state law. At the federal level, the German Code of Criminal Procedures states in relation to unidentified human remains:⁴⁵

Section 88

[Identification]

(1) The identity of the deceased person shall be established before the autopsy. In particular, persons who knew the deceased person may be questioned to this end and measures of forensic identification applied. In order to establish identity and gender, cell tissue may be removed and subjected to a molecular and genetic examination. Section 81f subsection (2) shall apply mutatis mutandis to the molecular and genetic examination.

Section 81f

(2) In the written order only experts who are publicly appointed, who are obliged under the Obligations Act or who hold public office and who are not members of the authority conducting the investigation, or belong to an organizational unit of such authority which, both in terms of its organization and its area of work, is separate from the official agency conducting the investigation, shall be appointed to carry out the examinations pursuant to Section 81e. The experts shall take technical and organizational steps to ensure that no inadmissible molecular and genetic examinations can be carried out and that no unauthorized third parties have access to information concerning the examinations. The material to be examined shall be given to the expert with no indication of the name, address or date or month of birth of the individual concerned. Where the expert is not a public agency, section 38 of the Federal Data Protection Act shall apply subject to the proviso that

⁴² <https://stsfreiburg.wordpress.com/hintergrund/gesetzese Entwurf/>

⁴³ Staubach, F. "Germany: Note limitations of DNA legislation" (2017). Nature <https://www.nature.com/articles/545030c>

⁴⁴ <http://www.gednap.org/de/spurenkommission/>; <https://www.dgrm.de/de/startseite/news-dgrm/stellungnahme-des-vorstandes-der-deutschen-gesellschaft-fuer-rechtsmedizin-dgrm-und-der-arbeitsgruppe-universitaere-forensische-genetik-ufg-zur-erweiterung-der-dna-analyse/>

⁴⁵ https://wwlisch_stpo.htmlw.gesetze-im-internet.de/englisch_stpo/eng

the supervisory authority shall also monitor compliance with data protection rules even if it has no sufficient indication that such rules are being violated and the expert is not processing personal data in data files.

This regulation states that only identity and sex can be determined in the context of deceased person cases. However, as far as a number of experts are concerned, missing persons regulation relating to unidentified human remains is governed at the state level under police law, and at this level they believe there is some 'flexibility in the law'. As far as we can understand, this may refer to the fact that some states have adopted the constitutional criminal regulation for their regulation governing unidentified human remains (as above), whereas others do not see this as being governed by criminal law, but have developed their own regulation. At this level, some states' regulation says little about unidentified human remains and therefore is more permissive to the use of FDP. One expert explained that deceased persons are not governed by Criminal Regulation as no crime has been committed and, in addition, the rights of deceased persons are not protected at the same level as those of living persons, whereas the relatives of a deceased person have a right to learn about the death of a family member. As such FDP can and is conducted on corpses, including ancestry and eye colour testing. There also seem to be ambiguities regarding the need for a court order to pursue FDP testing, and it seems that this is not always practiced. Either way, FDP is rarely used on unidentified human remains - mainly due to the fact that investigators have not been aware about the new technology.

6.8 Open questions

- At present, FDP is prohibited in Germany for criminal cases. Though there has been a proposed legislative plan to permit the identification of certain externally visible traits (EVCs), age and "biogeographical ancestry". Policy discussions are underway, and the topic is also the subject of discussions and criticism among stake holders and civil society organisations
- There is ambiguity regarding the legal situation for using FDP for unidentified human remains for which FDP is certainly practiced.

7. Poland

7.1 Introduction

There is very little Polish legislation on the use and storage of DNA for forensic purposes: the Code of Criminal Procedure (the most likely place to find such regulation) contains no information about forensic DNA typing; and The Police Act contains some regulation which is perceived by experts to only pertain to the storage of DNA for forensic purposes (this regulation was added in to allow Poland to take part in the Prüm treaty).

7.2 Relevant legislations

Poland has a civil law system. The laws relevant to FDP are:

- The Police Act
- The Code of Criminal Procedure

7.3 Regulation regarding the use of FDP

In Poland, there seems to be no explicit regulation relating to which forensic DNA tests can be performed (though, as we show below, to the letter of the law this is a little ambiguous). As such FDP is conducted in practice.

Chapter 1, Article 1 of The Police Act⁴⁶ (the only Act in Poland that contains any forensic DNA regulation) states that:

“The main tasks of the police shall comprise....running a database with information on the results of the analysis of deoxyribonucleic acid (DNA)”

Continuing in Chapter 3 (Scope of Police Powers), Article 20 of the Act states:

2. The police may collect, process and use for detection and information purposes Information...[..]and in particular.....personal data referred to in Article 27 (1) of the Act of 29 August 1997* on the protection of personal data, with the reservation that in the case of genetic code data, non-coding regions of the genome only

⁴⁶ http://www.policja.pl/ftp/pliki/police_act.pdf

**Article 27 (1) of the Act of 29 August 1997 bans any processing data on race, religion etc. and also genetic code. However, according Art. 27.2 item 2 the above-mentioned processing is admissible if a special article of another act allows such processing even without consent, and gives full guarantees of the data protection.*

The wording of this Police Act implies that only data from non-coding regions of the genome can be collected, processed and analysed. This is a view corroborated by legal opinion (for the opinion in Polish see Appendix A.3.1):

Accordingly, the provisions of the Police Act specify the rules regarding the gathering and processing of personal data by the police, discussed by Article 27 of the [Polish] Data Protection Act 1997. Such personal data include the ethnic background, political, religious, philosophical views and alignments, as well as information about health, genetic code, habits, sexual life and data concerning previous convictions, sentencing decrees and mandatory fines, as well as other decrees issues in judicial or administrative proceedings. Consequently, information concerning the genetic code that can be gathered and processed by the police includes exclusively information about the non-coding part of DNA. This means that data concerning the coding part of DNA cannot be gathered or processed by the police.

Having said this, a number of central actors explain that the context of this Act is that it was written entirely in terms of storing DNA profiles in a national database (to be in accordance with Prüm), and therefore does not apply to how forensic DNA analyses are performed. They point to Regulation No. 26 by the Commander in Chief of the Police from 10 July 2017 on the realisation by the police on the tasks connected with processing of information about the results of the analysis of DNA and managing the DNA database, published in the Official Journal of the Main Police Headquarters, item 48 (Appendix A.3.2). This document talks about the processing of forensic DNA information and the findings of forensic DNA analysis only in the context of storing STR profiles in a national DNA database, and says nothing about what types of DNA analyses may be performed. Because of this, experts feel that the Act, when referring to the fact that only non-coding regions of DNA may be analysed, relates only to the storage of forensic DNA profiles. Indeed, these actors believe their view - that FDP is permitted in Poland - is reflected in high levels of public support for the technology, which emerged following a 2015 double murder case in which age inference was successfully used. As such, FDP is used in Poland.

Legal opinion (the same opinion as that noted above) also notes that FDP can be a subject of a motion for evidence in courts since the Criminal Procedure Code does not contain any limitations to probative use of biological trace evidence (for the opinion in Polish see Appendix A.3.1):

Such information [FDP] can be the subject of a motion for evidence in the decision to admit an expert witness [since] the Criminal Procedure Code does not contain any limitations to probative use of biological trace evidence. Therefore, when a judicial body is deciding on admitting evidence from an expert witness, it can specify the scope of the motion for

evidence, by asking concrete questions concerning also the coding part of the genome. The motion for evidence can therefore include an order to determine the observable characteristics contained in the recorded biological trace evidence located in the coding part of the genome.

7.4 Situation relating to the use of FDP

In Poland, FDP is used without restriction with relation to what can be tested for, though it is mainly only used for more serious crimes.

Poland uses an inquisitorial procedure. When an FDP test is desired for a case, typically either a public prosecutor, Magistrate or the police (without a request from the prosecutor) will ask a laboratory to do the testing (criminal cases or unidentified human remains). There are no restrictions on which laboratory can do the tests but in practice the Central Forensic Laboratory of the Police (CFLP) in Warsaw is now treated as a Polish leader in FDP. At the CFLP, FDP for ancestry, hair and eye colour has been used for investigative purposes in three criminal cases and one unidentified human remain case. Age prediction tests can also be conducted if need be. The Institute of Forensic Research, which is part of the Ministry of Justice can also perform FDP tests on unidentified human remains, but, as far as we are aware, not for operational purposes in criminal cases. Finally, there are private laboratories in Poland which conduct FDP, including tests for the police, courts and the prosecutor's office.

7.4.1 Age

Expert legal interpretation suggests that the law does not explicitly forbid FDP. As such, age inference is practiced in Poland.

7.4.2 Ancestry

Expert legal interpretation suggests that the law does not explicitly forbid FDP. As such, ancestry inference is practiced in Poland.

7.4.3 Appearance

Expert legal interpretation suggests that the law does not explicitly forbid FDP. As such, appearance inference is practiced in Poland.

7.5 Regulation of the storage of FDP findings in a national database

As stated above, Poland has regulation regarding the storage of DNA in a national database (see Appendix A.3.3). This regulation states that only non-coding regions of DNA are permitted to be stored.

7.5.1 Age

Only markers from non-coding regions of DNA are permitted to be stored in the national database. If we only look to the letter of the law, this could include the storage of age inference findings for any methylation testing which is based in non-coding locations. However, if we look at the spirit of the law, and the reason legislators chose to only include non-coding regions (i.e., not least so that no disease-related information is stored), age prediction findings (which can potentially provide disease-related information by comparing lifetime and biological age) are not permitted to be stored.

7.5.2 Ancestry

Only markers from non-coding regions are permitted to be stored in the national database, and only STR/Y-STR markers are stored. Some of these STR markers may be able to provide information on biogeographical ancestry, but STRs are not strong predictors of biogeographical ancestry without additional SNP analysis, and in the spirit of the law, which aims to prohibit the storage of DNA markers which can infer observable traits, ancestry markers are forbidden to be stored and are not currently stored in the database.

7.5.3 Appearance

Only markers from non-coding regions of DNA are permitted to be stored. Some appearance markers are non-coding and so to the letter of the law could be stored in the database, though in the spirit of the law (as described in Sections 6.5.1 and 6.5.2) appearance inference findings are not permitted to be stored.

7.6 Current policy discussions

To the best of our knowledge there have been no policy discussions regarding an amendment to the law to explicitly legalise FDP (bar some discussions several years ago about DNA technologies in general). Though a couple of lawyers have called for such discussions, and one interviewee informed us of a soon to be published recent study exploring public prosecutor's knowledge and views on FDP which suggested that the majority of respondents believed that explicit regulation was required. Moreover, a Team for Predictive DNA analysis in Forensics has been established within the Polish Speaking Working Group of the International Society for Forensic Genetics. The team is led by Dr. Magdalena Spólnicka from the Central Forensic Laboratory of the Police in

Warsaw and has the aim to work on an appropriate legislation amendment. The work will involve lawyers and DNA experts. Contact with policy makers is planned.

7.7 FDP for unidentified human remains

In Poland, the Police Act regulates both criminal cases and those related to unidentified human remains in the same way (see Appendix A.3.4 for the relevant sections of the Act).

7.8 Open questions

- FDP is practiced in Poland. This is because experts interpret their Police Act, which limits genetic analyses to non-coding regions, as only relating to analyses which will be stored in the national DNA database. However, there is no legal text which explicitly states this.
- Without regulation, there is no guidance regarding which phenotypic characteristics can be probabalistically tested for using FDP.

8. Spain

8.1 Introduction

Beyond the legal basis of the Spanish DNA database there is no explicit regulation related to the use of FDP in Spain, nor any forensic DNA analysis. A statutory body exists (*Comisión Nacional para el Uso Forense del ADN* (CNUFADN) - National Commission for the Forensic application of DNA) entrusted with reviewing and regulating all aspects related to the national forensic DNA database.

8.2 Relevant legislation

Spain has a civil law system. Case law complements the legal system because the Supreme Court upholds legal doctrine in its interpretation of the various sources of law; and because the opinions of legal experts provide interpretations and clarifications of the law. As such, Spain has a mainly inquisitorial legal procedural system with some elements of an adversarial system (in Spain, referred to as the Roman Justinian System and the Old German Systems). Relevant legislation related to FDP include:

- The Law of biomedical research which regulates the creation of biobanks (*Ley de Investigación Biomédica*).⁴⁷ This contains statements about data protection and consent for genetic material, but the law is intended for clinical applications and is therefore outside the criminal and forensic scope⁴⁸
- The Royal Decree of the Criminal Code (law: *La Orgánica* 15/2003), which regulates the functions of the National Commission for the Forensic application of DNA (CNUFADN)⁴⁹
- The Law 10/2007 of 8 October, regulating how the police handle data obtained from the DNA database⁵⁰
- The Law 15/1999 on Protection of Personal Data; article 22. This deals with data protection in the police forces and bodies, but there is nothing specific about FDP (see Appendix A.4.1)

⁴⁷ <https://www.boe.es/boe/dias/2007/07/04/pdfs/A28826-28848.pdf>

⁴⁸ *Protección de datos: se garantizará el derecho a la intimidad y el respeto a la voluntad del sujeto en materia de información, así como la confidencialidad de los datos genéticos de carácter personal; 1. Será preciso el consentimiento expreso y específico por escrito para la realización de un análisis genético.*

⁴⁹ <https://www.boe.es/buscar/doc.php?id=BOE-A-2008-19992>

⁵⁰ *Orgánica* 10/2007, de 8 de octubre, reguladora de la base de datos policial sobre identificadores obtenidos a partir del ADN. <http://www.boe.es/boe/dias/2007/10/09/pdfs/A40969-40972.pdf>

Relevant bodies

- **National Commission for the Forensic application of DNA (*Comisión Nacional para el Uso Forense del ADN*) (CNUFADN;** see above for law which established/regulates this body). This body provides advisory, regulatory and oversight functions of the national DNA database which include supervision of accreditation and quality control measures in laboratories concerned with genetic profiles; development and evaluation of procedures and protocols for confidentiality, storage of samples and analysis of profiles; ethical and legal advice; ensuring compliance with international criteria and standards. Within the commission there are two working groups: the Permanent Technical Commission and the Legal and Bioethical Group.
- ***Entidad Nacional de Acreditación - ENAC.***⁵¹ The agency is appointed by the government to operate in Spain as the only National Accreditation Body, pursuant to Regulation (EU) No 765/2008 that regulates the functioning of accreditation in Europe. ENAC accreditation is currently required for any DNA analysis in the criminal field but the body has no competence to establish or recommend the use of new markers in forensic genetics.

8.3 Regulation relating to the use of FDP

As in most other countries covered in this Report, there is no dedicated law in Spain addressing FDP specifically, or regarding which forensic DNA tests can or cannot be performed more generally. There is also no law proscribing the use FDP. The only relevant law is related to the storage of DNA in a national database for forensic purposes, where it is stated that only DNA profiles of markers located in non-coding regions and facilitating the identification and sex of a sample donor can be incorporated. As such, FDP is practiced in Spain.

In Spain, as in other inquisitorial legal systems, an examining Magistrate is in charge of investigating a crime, including collecting evidence, assisted by the judicial police. The public prosecutor or defence lawyer may ask the judge to follow specific leads in the investigation.⁵² Examining Magistrates in Spain often request FDP testing for a specific case. The regulation that forms the basis of these requests is Article 456 in the Law of Criminal Procedure which states that *'The judge will agree upon the expert reports if scientific or artistic knowledge are needed in order to appreciate or understand an important fact or circumstance in the brief'*⁵³ i.e., a Magistrate must

⁵¹ <https://www.enac.es/web/english/what-we-do/about-accreditation>

⁵² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/139600/legal-procedures-criminal-cases.pdf

⁵³ *El Juez acordará el informe pericial cuando, para conocer o apreciar algún hecho o circunstancia importante en el sumario, fuesen necesarios o convenientes conocimientos científicos o artísticos.*

request scientific expertise if it is deemed relevant to a case. An expert analysis on the judicial use of scientific and artistic expertise states that:⁵⁴

1) Initiative for making expert reports for criminal instruction.

At first and in all appropriate legal cases, the investigating judge must agree ex officio on the making of an expert report. The prosecuting authority and all the contracting parties can ask the judge to carry out experts reports. The judge will agree unless he considers them to be detrimental or useless...the judicial resolution that denies an expert report proposed by any of the contracting parties is appealable .

2) Cases in which the expert report proceeds for criminal instruction.

The origin of the expert reports is determined, in general, by the need or advisability of non-judicial knowledge, that according to the law, are “ artistic or scientific” knowledge needed to better appreciate the facts or circumstances relevant to the object of the process.

8.4 Situation regarding use of FDP

As far as we can tell, only one laboratory is performing FDP in Spain - the *Instituto de Ciencias Forenses*, University of Santiago de Compostela - though the National Institute of Toxicology will likely soon also have the expertise. The *Instituto de Ciencias Forenses* currently performs about 20 FDP tests per year. Requests for FDP are mainly from cases in Spain following a judicial order, but also several international cases have been received. Because of this judicial order, the laboratory is legally required to perform FDP. The first time a judicial order was made to conduct FDP was during the Madrid attacks in 2004 but since then many FDP tests have been performed, some of them in well-known cases, such as that of Eva Blanco. Most tests requested are for biogeographical ancestry, but there have also been requests for pigmentation testing (eye, hair and skin color), and recently also for age prediction. Different markers are used for biogeographical ancestry depending on the type of analysis to be conducted and case circumstances.

⁵⁴ *Análisis sobre la prueba pericial en la Ley de Enjuiciamiento Civil y en el proceso penal español Catedrático de Derecho Procesal* (Jaime Vegas Torres). Published in P. Laguna and others, *The economic expert test in the Spanish procedural field*, Rey Juan Carlos University, Madrid, 2009, pgs. 51-71:

LECrim regula la realización de informes periciales dentro del proceso, como actividad de investigación propia de la instrucción de la causa.

1) Iniciativa para la realización de informes periciales en la instrucción penal

En principio, el juez de instrucción debe acordar de oficio la realización de un informe pericial en todos los casos en que sea legalmente procedente.

El Ministerio Fiscal y las demás partes personadas pueden proponer al juez que se realicen informes periciales, y el juez así lo acordará salvo que lo considere inútil o perjudicial. La resolución judicial que deniegue un informe pericial propuesto por alguna de las partes es recurrible en apelación o en queja, conforme a lo previsto en el art. 311 LECrim.

2) Casos en que procede el informe pericial en la instrucción penal

La procedencia del informe pericial viene determinada, con carácter general, por la necesidad o conveniencia de conocimientos especializados no jurídicos —conocimientos “científicos o artísticos”, dice la Ley— para apreciar hechos o circunstancias relevantes atendido lo que sea objeto del proceso.

Requests for FDP can also come from the police. Whilst the *Instituto de Ciencias Forenses* has to adhere to judicial orders for FDP testing, they have the right not to perform FDP requests from the police (because it is not a judicial order). Several FDP tests have been requested by the police, but with a judicial order, so no situation has arisen in which they have refused a police request.

8.4.1 Age

There is no explicit regulation forbidding FDP, as such age inference is conducted in Spain.

8.4.2 Ancestry

There is no explicit regulation forbidding FDP, as such ancestry inference is conducted in Spain.

8.4.3 Appearance

There is no explicit regulation forbidding FDP, as such appearance inference is conducted in Spain.

8.5 Regulation of the storage of FDP findings in a national database

Storing FDP findings is forbidden in Spain. The Organic Law that regulates DNA databases (Law 10/2007 Of 8 October, regulating how the police handle data obtained from the DNA), forbids the storage of DNA profiles from coding regions (it only allows storage for information relating to identification and biological sex). The extract reads:

This regulation contains a very special safeguard, which is essential to eliminate any infringement of the right to privacy, since only those DNA profiles that reveal, exclusively, the identity of the subject - the same one that offers a fingerprint - and sex, but, in any case, none of those of coding nature that reveal any other data or genetic characteristic can be included⁵⁵

8.5.1 Age

FDP findings from age inference are explicitly forbidden to be stored in the Spanish national database.

⁵⁵ *Esta regulación contiene una salvaguarda muy especial, que resulta fundamental para eliminar toda vulneración del derecho a la intimidad, puesto que sólo podrán ser inscritos aquellos perfiles de ADN que sean reveladores, exclusivamente, de la identidad del sujeto –la misma que ofrece una huella dactilar– y del sexo, pero, en ningún caso, los de naturaleza codificante que permitan revelar cualquier otro dato o característica genética*

8.5.2 Ancestry

FDP findings from ancestry inference are explicitly forbidden to be stored in the Spanish national database.

8.5.3 Appearance

FDP findings from appearance inference are explicitly forbidden to be stored in the Spanish national database.

8.6 Current policy discussions

1. There is a debate between police and judges on the use of FDP techniques (and DNA testing and database storage in general). We were told that many police officers would like to have extensive powers to decide in which cases and what type of analysis should be carried out. On the other hand, judges, lawyers and legal doctrine, and academics in philosophy of law believe FDP should be supervised by a judge.

2. In their 2015 Report, The National Commission for the Forensic Use of DNA stated:

The increasing implementation in forensic genetics laboratories of new massive sequencing platforms was highlighted. This opens up the possibility of routinely applying new DNA markers to forensic cases and particularly highlights possible application of biogeographical ancestry DNA markers and physical appearance DNA markers. The STC [Standing Technical Committee] agreed on the need to review the current development status of these new DNA analysis systems, and also to evaluate criteria regarding application, interpretation and value as evidence⁵⁶ (P.26)

The STC is just one of two committees of the National Commission for the Forensic Use of DNA - the other being the ethics committee. Representatives of each committee sit on the General Council, which itself is high in the judicial legal structure and in a position to promote/change law. In the upcoming months, the Technical Commission will review the application of biogeographical ancestry and phenotypic (including age) DNA markers in the forensic field and eventually recommend to the plenary of the commission the need for legal reform to explicitly include the use of these markers in the forensic field. The recommendation will not have a binding character, but will be proposed to the legislative power to push for such reform.

56

http://www.mjusticia.gob.es/cs/Satellite/Portal/1292428490841?blobheader=application%2Fpdf&blobheadername1=Content-Disposition&blobheadername2=Descargas&blobheadervalue1=attachment%3B+filename%3DNational_Commission_for_the_forensic_use_of_DNA._Activities_2015.PDF&blobheadervalue2=1288795844137

8.7 FDP for unidentified human remains

The same (lack of) law covers criminal cases and unidentified human remains cases in Spain. FDP has been performed in some of the latter cases in Spain.

8.8 Open questions

- There is no explicit law forbidding FDP in Spain, as such, FDP is practiced. Some experts do not see the need for legal reform since FDP is already being used. Other experts have called for law reform via the incorporation of an explicit law, arguing: that without the explicit law pertaining to FDP, it is happening without necessary legal and ethical discussion; an explicit law can ensure that only valid FDP tests are used; and legislation could ensure that FDP is only performed following a judicial order (which is deemed as appropriate given the potential for misuse).

9. Sweden

9.1 Introduction

In 2015, the Swedish Police Authority was reorganised so that the Swedish National Forensic Centre (previously Swedish National Laboratory of Forensic Science - SKL) became part of the Swedish Police Authority. Whilst this was occurring, the laws governing the Swedish National Forensic Centre were re-visited and a new Police Data Act was developed. During this time, questions were asked regarding whether to provide an explicit legal basis for FDP (which was missing at the time). The legislator decided that since FDP was developing rapidly, and since there was a reluctance to stifle this process via legislation, it was too early to explicitly legislate. Rather, FDP would be permitted on the basis that there is no law explicitly forbidding it, until a time came when legislation would be more appropriate. As such, the only legal documents explicitly governing FDP are the accompanying materials to the Police Data Act, which came into effect on August 1, 2015.

9.2 Relevant Legislation

Sweden has a strong civil law tradition though has some influences from aspects of the common law tradition.⁵⁷ The legislation relevant to FDP is the:

- *Polisdatalagen* (2010:361) ("Police Data Act"), Chapters 4 (concerning the DNA database) and 5 (concerning how forensic evidence information may be used).⁵⁸

9.3 Regulation relating to the use of FDP

The only legislation in Sweden which relates to the use of FDP is Chapter 5 of the Police Data Act. This Chapter does not address FDP explicitly, but rather provides general legislation regarding how to handle and process DNA data. The specific extract below is the relevant section.⁵⁹

Purpose

1 § The National Forensic Centre is permitted to handle personal data if it is required in order to [...]

⁵⁷ <https://journals.iupui.edu/index.php/iiclr/article/download/17766/17949>

⁵⁸ http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/polisdatalag-2010361_sfs-2010-361

⁵⁹ *Vid Nationellt forensiskt centrum får personuppgifter behandlas om det behövs för att. [...] 5. ta fram uppslag i syfte att underlätta arbetet med att förhindra eller upptäcka brottslig verksamhet eller utreda och beivra brott, genom att använda resultat från sådana åtgärder som anges i 2 eller i 2 § andra stycket*

5. generate forensic intelligence reporting with the purpose to facilitate the work of preventing or detecting criminal activity, or investigating and prosecuting crimes, by using results from such measures as are stated in 2 or 2 § second section.

Whilst not explicitly referred to in this legal text, we were informed that FDP (at least the analysis of sex, which was being tested for at the time, rather than FDP specifically) was in the minds of legislators when this Data Act was written. Legislators were concerned that too harsh a legislation would have restricted the development of FDP, and this view is highlighted in the following extract from the proposal of the legislation. This proposal⁶⁰ explains the meaning of 'forensic intelligence reporting' (described above in the legislation) and that this relates to the need for law enforcement to be able to make probabilistic inferences about a phenotype of a possible offender to help determine his/her identity. In the proposal, sex testing is used as an example since this was the only type of phenotypic testing available at the time of legislation, but our interviewees emphasised that the remit of the legislation extends to age, ancestry and appearance prediction testing:

4.2.7 Forensic intelligence reporting⁶¹

It may happen that the forensic evidence existing in a specific case is not enough for the laboratory to give a statement, whilst nevertheless being able to draw certain conclusions which can have an impact on how the pursuit of the offender ought to be directed. It might, for example, be a matter of the DNA trace not providing sufficient information for it to be tied to a certain alleged person, but there may still be a certain probability that the suspect may be the offender. It may also be a matter of the person who has given a specific trace is of a different biological sex than that which the authorities investigating the crime are assuming.

...[.].

As a special purpose, as given in the first section of point 5, data may be handled with the aim of facilitating the work of preventing or discovering criminal activity, or to investigate and prosecute crimes, by using the results retrieved by forensic investigations, so called intelligence reporting....A forensic intelligence lead may also relate to the information which

⁶⁰<http://www.regeringen.se/49bb7a/contentassets/d481789c16fb47e99b17f56627e653d7/den-nya-polisorganisationen---nagra-fragor-om-personuppgiftsbehandling-m.m.-prop.-20141594>

⁶¹ 4.2.7 Forensiska uppslag

.....Det förekommer också att det underlag som finns i ett enskilt ärende inte är tillräckligt för att laboratoriet ska kunna avge ett utlåtande, men att det ändå går att dra vissa slutsatser som kan få betydelse för hur spaningarna efter gärningsmannen bör inriktas. Det kan t.ex. vara fråga om att DNA-spåret inte ger tillräcklig information för att det ska kunna knytas till en viss utpekad person, men att det ändå finns en viss sannolikhet för att den misstänkte kan vara gärningsman. Det kan också vara fråga om att den som har avsatt ett visst spår är av ett annat kön än vad brottsutredarna utgår från...

...Som ett särskilt ändamål anges i första stycket punkten 5 att uppgifter får behandlas för att ta fram uppslag i syfte att underlätta arbetet med att förhindra eller upptäcka brottslig verksamhet eller utreda och beivra brott genom att använda de resultat man får fram vid forensiska undersökningar, s.k. forensiska uppslag. Det kan t.ex. vara fråga om systematiska undersökningar som rör olika sorters narkotika eller bearbetning av uppgifter från olika brottsplatser för att undersöka eventuella samband mellan olika brott. Ett forensiskt uppslag kan också avse sådana uppslag som spåren i ett enskilt ärende kan ge upphov till. Om analysresultatet i ett ärende inte är av tillräckligt hög kvalitet för att ett utlåtande ska kunna lämnas kan det ändå gå att dra vissa slutsatser av resultatet som kan få betydelse för inriktningen av brottsutredningen. Det kan exempelvis komma fram information om att den som har avsatt spåret är av ett annat kön än vad brottsutredarna utgår från.

the traces from a specific case may provide. If the results of the analysis of a specific case are not of high enough quality for a statement to be given, it may still be possible to draw certain conclusions from the result which may bear importance to the direction of the criminal investigation. For example, information may arise indicating that the person who has left the trace is of a different biological sex than what the criminal investigators assume.

As such, the interpretation by the Swedish National Forensic Centre of these legal texts is that it is free to apply a broadened use of DNA analysis methods for crime scene traces (from unknown individuals), including age, appearance and ancestry inference, with no set limitation of the application in order to generate forensic intelligence leads.

9.4 Situation regarding the use of FDP

Criminal cases

Under Swedish law, which has an intermediate inquisitorial legal system, the power to initiate and lead a preliminary investigation is shared between the police and the prosecution service, and Swedish police officers always conduct preliminary investigations.⁶²

The Swedish National Forensic Centre is the only facility with permission to use FDP in criminal cases according to the Police Data Protection Act. Though it is open as to whether this is a legal *requirement* or whether it is just the norm of practice. The Police Data Protection Act Chapter 5 § 1 (above) talks about the Swedish National Forensic Centre handling data but there was some suggestion from our interviewees that other laboratories could conduct FDP. We were informed that whilst there are no private laboratories in Sweden to conduct the testing, Swedish police could use commercial or private laboratories abroad, but it would have to be approved by the Swedish National Forensic Centre first.

Despite not being prohibited, FDP testing is not performed in Sweden (though it is sub-contracted out - see below). This is because, prior to the Police Data Protection Act of 2015, FDP was not conducted at all in Sweden, and the Swedish National Forensic Centre are only now just beginning to build up their scientific and technical competence with regards to using and interpreting the various FDP kits and markers. Until this is achieved, the Swedish National Forensic Centre has been sending samples abroad for FDP analysis. This occurs only rarely (about once a year) and for high profile cases. Eye colour, hair colour and ancestry are all tested.

The Swedish National Forensic Centre are hoping to begin using FDP in Sweden in the next few years, depending on whether and how long it takes for validated methods to become available.

⁶² <https://www.cairn.info/revue-internationale-de-droit-penal-2011-3-page-523.htm>

Unidentified human remains

Lineage ancestry testing, but not biogeographical ancestry inference is being used in the government's forensic medicine laboratory. This laboratory is separate to the police Swedish National Forensic Centre which handles criminal cases. Specific ancestry markers used for testing include STRs and SNPs located on the Y-chromosome (though the laboratory note that SNPs located on autosomal chromosomes are used for testing in a research capacity). Testing unidentified human remains is rare, and only used once or twice a year. When it is, findings are stored in a case file for up to 70 years as per the legislation.

9.4.1 Age

FDP for age inference is not explicitly forbidden in Swedish law, in fact the interpretation of the legislation suggests that FDP is permitted. FDP is, however, not currently conducted due to a lack of sharp, validated methods.

9.4.2 Ancestry

FDP for ancestry inference is not explicitly forbidden in Swedish law, in fact the interpretation of the legislation suggests that FDP is permitted. Lineage testing is conducted for unidentified human remains and FDP is sub-contracted abroad for criminal cases (due to a current lack of technical competence in Sweden).

9.4.3 Appearance

FDP for appearance inference is not explicitly forbidden in Swedish law, in fact the interpretation of the legislation suggests that FDP is permitted. FDP is, however, not conducted due to a lack of technical competence in Sweden and tests are sub-contracted abroad for criminal cases.

9.5 Regulation of the storage of FDP findings in a national database

The Swedish DNA database legislation became effective in April 1999 and is regulated by Chapter 4 of the Police Data Act. The legislation explicitly states that only STR DNA profiles, which can be compared with other STR profiles, are permitted to be stored in the national database⁶³

⁶³ **3 §** *En DNA-profil som registreras får endast ge information om identitet och inte om personliga egenskaper.*

Utöver DNA-profiler får DNA-registret innehålla uppgifter om vem analysen avser och i vilket ärende profilen har tagits fram samt brottskod.

4 § *Utredningsregistret får innehålla DNA-profiler från prov som har tagits med stöd av 28 kap. rättegångsbalken och som avser personer som är skäligen misstänkta för brott på vilket fängelse kan följa.*

5 § *Spårregistret får innehålla DNA-profiler som har tagits fram under utredning av brott och som inte kan hänföras till en identifierbar person. Utöver DNA-profiler får spårregistret innehålla upplysningar som visar i vilket ärende profilen har tagits fram och brottskod.*

The DNA Database

3 § A registered DNA profile may only provide information regarding identity, and not of personal characteristics.

In addition to DNA profiles, the DNA Database may contain information concerning who the analysis relates to, and in which cases the profile has been drawn up, as well as crime classification.

Investigation Database

4 § The Investigation Database may contain DNA-profiles from tests conducted which have been taken with support of Chapter 28 of the Code of Judicial Procedure, and which pertains persons who are suspected on reasonable grounds for a crime for which imprisonment may follow.

Trace database

5 § The Trace Database may contain DNA profiles which have been drawn up during a criminal investigation and which cannot be traced back to an identifiable person. In addition to DNA profiles, the Trace Database may contain information which specifies for which case the profile has been drawn up, as well as crime classification.

9.5.1 Age

Age inference findings are not permitted to be stored in Sweden's national database as a registered DNA profile may only provide information regarding identity, and not of personal characteristics.

9.5.2 Ancestry

Ancestry inference findings are not permitted to be stored in Sweden's national database as a registered DNA profile may only provide information regarding identity, and not of personal characteristics.

9.5.3 Appearance

Appearance inference findings are not permitted to be stored in Sweden's national database as a registered DNA profile may only provide information regarding identity, and not of personal characteristics. Even biological sex as determined by the genetic marker amelogenin is not allowed in the trace database.

9.6 Current policy discussions

There are currently no policy discussions about FDP in Sweden.

9.7 FDP for unidentified human remains

The Police Data Protection Act applies only to criminal cases. It is only applicable for unidentified human remains which also relate to criminal cases (of which there are very few).

9.8 Open Questions

- Current regulation interprets that FDP is permitted even though there is no explicit regulation pertaining to FDP. This status quo is seen as acceptable by some. For others, explicit regulation is necessary to: provide guidance about which FDP tests can be conducted; ensure those tests conducted are reliable; and/or determine which FDP findings should be communicated to the police/public. Not all agree with the need for regulation.

10. The Netherlands

10.1 Introduction

The Netherlands is the only European country that explicitly legally permits FDP.

10.2 Relevant legislation

The Netherlands has a civil legal system. The legislations relevant to FDP are:

- The Code of Criminal Proceedings
- The DNA decree

10.3 Regulation relating to the use of FDP

The Netherlands is the only EU country which has explicit legislation permitting the use of FDP. This legislation limits the use of FDP to predictions of biogeographical ancestry (called 'race' in the Netherlands), and defined externally visible characteristics.

The Dutch Code of Criminal Procedure is the key piece of legislation. It was amended in 2003 to permit the use of FDP in The Netherlands (2003 Amendment to the Penal Code for the regulation of DNA research in criminal matters: *Besluit DNA-onderzoek in strafzaken*). The amendment to the law states that a public prosecutor or an investigative judge can order ancestry, biological sex and externally visible characteristic testing for forensic purposes (though it does not state which externally visible characteristics are allowed to be tested - each trait needs to be individually approved by a separate Decree - see below). Having the public prosecutor or investigative judge order a test is typical of investigatorial legal systems such as The Netherlands. Though it is also because the police are not authorised to carry out or commission such tests themselves so as to ensure that a judge/prosecutor can appropriately weigh up the predictive nature of the test and only order it if deemed necessary. The Amendment to the Penal Code (*Besluit DNA-onderzoek in strafzaken*), states specifically:

Act of 8 May 2003 amending the regulation of DNA research in criminal matters related to the determination of appearance perceptible personal characteristics cell material⁶⁴

ARTICLE I

The Code of Criminal Procedure is amended as follows:

Article 138a is replaced by the following:

Article 138a

DNA research is understood as the study of cell material that is only aimed at comparing DNA profiles or determining individually identifiable personality characteristics of the unknown suspect.

After Article 151c, an Article is inserted, which reads:

Section 151d

1. The public prosecutor may, in the interest of the investigation, order DNA testing aimed at establishing externally observable personal characteristics of the unknown suspect or the unknown victim to be conducted. Section 151a(2) shall apply mutatis mutandis.
2. The DNA testing may only be aimed at establishing the sex, race or other externally observable personal characteristics designated by Governmental Decree.
3. The proposal for a Governmental Decree to be enacted pursuant to subsection (2) shall not be made any earlier than four weeks after the draft Governmental Decree has been submitted to both chambers of the States General.
4. The DNA testing may be ordered only in the case of suspicion of a serious offence as defined in section 67(1).
5. Further rules pertaining to the manner of conduct of the DNA testing may be set by Governmental Decree.

After Article 195e, an Article is inserted, which reads:

Section 195f

1. The examining Magistrate may, in the interest of the investigation, order that DNA testing aimed at establishing externally observable personal characteristics of the unknown suspect or the unknown victim be conducted. Section 195a(2) shall apply mutatis mutandis.
2. The DNA testing may only be aimed at establishing the sex, race or other externally observable personal characteristics designated by Governmental Decree.
3. The proposal for a Governmental Decree to be enacted pursuant to subsection (2) shall not be made any earlier than four weeks after the draft Governmental Decree has been submitted to both chambers of the States General.

⁶⁴http://www.ejtn.eu/PageFiles/6533/2014%20seminars/Omsenie/WetboekvanStrafvordering_ENG_PV.pdf

4. The DNA testing may be ordered only in the case of suspicion of a serious offence as defined in section 67(1)⁶⁵.

5. Further rules pertaining to the manner of conduct of the DNA testing may be set by Governmental Decree.

In the Explanatory note of the Bill, externally observable characteristics (see Section 151d/195f point 1) are described as *‘those physical personal characteristics that are observable to each individual and therefore can usually also be used to make a composite drawing based on witness findings and therefore necessary and useful for identifying the potential suspect’s identity’* (Kamerstukken II 2001/02, 28 072, nr. 3, p. 4). In response to this Explanatory note and the Bill, members of Parliament’s Lower House (*Tweede Kamer*) asked questions about the scope and limitation of DNA testing on externally observable personal characteristics. In that context, the then Minister of Justice used the words “from birth” to suggest that only those characteristics visible from birth are permitted to be tested for:

This positive wording means that, for example, non-externally visible characteristics of a person, such as her/his mental status or non-apparent (lit. “hidden”) heritable deviations of the unknown suspect, are (to be) excluded from DNA analysis (whereas) hereditary disorders or diseases of which it is certain that the affected person is aware of because they manifest themselves from birth and visible to everyone may be the subject of DNA analysis⁶⁶

As is shown below, this concept of “from birth” is not adhered to in the strictest of senses.

Royal Decree

In regards to which externally visible characteristics are permitted to be predicted by FDP, as the Amendment states above (Section 151d point 5 and 195f point 5), a Royal Decree is required for each externally visible characteristic to be legally approved. This is because at that time the legislation was proposed, no externally visible characteristics, bar red hair, could be predicted from DNA. It was considered that as traits became predictable they would need to be approved by the Parliament (*Tweede Kamer*) on an individual basis. So far there have been Royal Decrees for eye colour inference in 2012 and for hair colour inference in 2017 (both of which may be different from birth). Extracts from these Decrees state:

⁶⁵ A serious crime is considered one with a penalty of four years or more.

⁶⁶ *Zie Kamerstukken II 2001/02, 28 072, nr. 5, p. 15 ‘Door deze positieve formulering zijn bijvoorbeeld nietuiterlijk waarneembare persoonskenmerken, zoals de psychische gesteldheid of verborgen erfelijke afwijkingen van de onbekende verdachte, uitgesloten van DNA-onderzoek, en kunnen erfelijke aandoeningen of ziekten waarvan met zekerheid kan worden gesteld dat de betrokken persoon daarvan op de hoogte is, omdat zij zich altijd vanaf het begin van de geboorte manifesteren en voor een ieder zichtbaar zijn, wel voorwerp van DNA-onderzoek zijn’.*

2012⁶⁷

Article 7a

If personally identifiable personal characteristics of an unknown suspect or an unknown victim to whom a DNA investigation as referred to in article 151d, paragraph 1 or article 195f, paragraph 1, may be designated:

- a. the gender⁶⁸
- b. the race;
- c. the eye color.

2017⁶⁹

Article 1b

If personally identifiable personal characteristics of an unknown suspect or an unknown victim to whom a DNA investigation referred to in the first sentence of Article 151d, first sentence, first sentence, or 195f, first paragraph, first sentence, of the Act may be designated:

- a. the gender;
- b. the race;
- c. the eye color;
- d. the hair color.

Future Decrees could allow for further traits to be added, and a Decree to allow for skin colour inference is viewed by some of the experts we spoke to as imminent (the Decree will be applied for in 2018). The Ministry of Justice will only grant a Royal Decree for a specific trait once valid predictive tests have been developed and published in relation to: finding the relevant genes; finding predictive DNA markers; developing statistical prediction models based on the predictive DNA markers; developing a laboratory tool to analyse the predictive DNA markers; and validating the laboratory tool. The approval process typically takes a couple of years to be enacted.

Data Protection

As far as we are aware, there are no provisions in the Dutch Data Protection law that would limit the use of FDP testing. If there were they would be overruled by the provisions of the DNA-law and the DNA decree. There were provisions in the Dutch Data Protection Law which prevented familial searching but these went out of force via an adjustment of the Dutch DNA-law in 2012.

⁶⁷ *Als uiterlijk waarneembare persoonskenmerken van een onbekende verdachte of een onbekend slachtoffer waarop een DNA-onderzoek als bedoeld in artikel 151d, eerste lid, eerste volzin, of artikel 195f, eerste lid, eerste volzin, van de wet gericht kan zijn, worden aangewezen:*

- a. *het geslacht;*
- b. *het ras;*
- c. *de oogkleur.*

⁶⁸ This is the term used in the official English legal texts, and so we use it here, but understand that the translation is more accurately biological sex

⁶⁹ <https://zoek.officielebekendmakingen.nl/blg-593128.pdf>

10.4 Situation regarding the use of FDP

The Netherlands operates an inquisitorial legal system. FDP is used as an investigative tool by the Dutch Public Prosecution Office (who investigate and gain evidence for cases), with the only aim to narrow down the number of possible suspects. It is an established policy of the Dutch Public Prosecution Office to use FDP only if all other investigative tools have failed i.e., as a last resort and only in the case of a serious offence (see above). Other DNA profiling/non-DNA evidence will always be necessary to successfully prosecute a person.

Primarily, the National Forensics Institute (NFI; an agency of the Ministry of Justice) and the Forensic Laboratory for DNA Research (FLDO) at the Leiden University Medical Centre, which also acts as official second opinion laboratory for the Ministry of Justice, are the institutions which conduct FDP testing for the Dutch police. Other laboratories also conduct FDP, including one at Maastricht University, as well as some private companies. For a range of reasons, EVC inference for hair colour is used infrequently by the NFI (eye colour predictions have only been permitted since 2012 and hair colour predictions since 2017). Some of our interviewees held the view that these tests are deemed of little use in most cases as they provide little information to the crime investigation, and they also use relatively large quantities of DNA; other interviewees strongly disagreed with this. Ancestry inference testing is more commonly used, with some interviewees estimating about 15-20 times a year. This testing is mainly conducted by FLDO: the NFI test the mitochondrial DNA control region, as well as conduct Y-STR testing for lineage testing, but for more detailed biogeographical ancestry predictions using SNPs, samples are sent to the FLDO. As far as we are aware the use of ancestry DNA testing has been successful in a number of cases, including a double rape case in which the two eyewitness accounts were contradictory - FDP was used to confirm which was correct and eventually led to an arrest of the rapist.

Ancestry DNA testing has also been used on occasion in conjunction with DNA familial searching (explicitly legalised in 2012). In these instances, when a crime scene stain from a serious crime had not matched a profile in the national database (this is not uncommon given the database is only 1.5% of the Dutch population - 265,000 profiles and 17.1 million inhabitants), ancestry inference testing was used to gain information about the suspected perpetrators' ancestry (from the crime scene DNA) so that familial (lineage) mass screening could take place for men of that particular ancestry (mass screening for men only, based on Y-STR analysis). An example of this is the Milica van Doorn murder case, which was solved by DNA ancestry guided DNA familial search based mass screening after 25 years.

10.4.1 Age

FDP for age inference is not explicitly permitted at this time. One interviewee queried whether age could ever be considered as an EVC, and if so, whether age prediction testing could be applied for now or in the future.

10.4.2 Ancestry

There is explicit legislation which allows the use of FDP for ancestry inference.

10.4.3 Appearance

There is explicit legislation which allows the FDP for the inference of EVCs. Though as of 2012 this only included predictions for eye colour and since 2017 also for hair colour.

10.5 Regulation of the storage of FDP findings in a national database

In The Netherlands, forensic DNA profiles are stored in the DNA database of the NFI. The specific statutory basis for the Dutch forensic DNA database is Article 14 (1) of the DNA Decree 'Decision of 27 August 2001 laying down detailed rules on DNA research in criminal matters' (Decision on DNA research in criminal matters; *Besluit DNA-onderzoek in strafzaken*), amended in a later decree of 2009. This regulation speaks only of DNA profiles, and it can be assumed that at the time of issuing the law the term "profile" was understood to pertain to autosomal STR profiles. An extract of the Decree states as follows:

1. There is a DNA database for criminal cases that aims to promote the detection, prosecution and punishment of criminal offenses and the identification of an identity.
- 2 Our Minister is responsible for the DNA database.
- 3 The director of the institute manages the DNA database.
- 4 The Institute shall enter the trace identification number referred to in Article 6(1)(a) in the DNA database as well as
 - a. The associated DNA profile of unknown and known deceased victims of crimes as defined in article 67, paragraph 1 of the law,
 - b. the associated DNA profile of persons suspected of being missing as a result of crimes as defined in article 67, paragraph 1 of the law,
 - c. the associated DNA profile of unknown suspects

The retention periods of the DNA profiles and cellular material from which those DNA profiles are obtained, are laid down in Section 16 to 18c.

10.5.1 Age

There is little regulation on this, and what there is is only in the sense that DNA profiles are stored in the database - it depends how a 'DNA profile' is defined. Having said that, it is not legal to conduct FDP age predictions, and so age inference findings are not stored in the national database.

10.5.2 Ancestry

There is little regulation on this, and what there is is only in the sense that DNA profiles are stored in the database - it depends how a 'DNA profile' is defined. Having said that, FDP findings from ancestry inference tests are not stored in a national database.

10.5.3 Appearance

There is little regulation on this, and what there is is only in the sense that DNA profiles are stored in the database - it depends how a 'DNA profile' is defined. Having said that, FDP findings from appearance inference tests are not stored in a national database.

10.6 Current policy discussions

The only relevant policy discussion is the current possibility of applying for skin colour to be added via Royal Decree. Many of our interviewees felt that skin colour and biogeographical ancestry should always be treated (and regulated) in conjunction because one of the roles of biogeographical ancestry information is to make the skin colour prediction stronger. This view was not held unanimously, however.

The Ministry of Justice (after a request by NFI) will only start the approval procedure via the Parliament (*Tweede Kamer*) when they see published evidence that skin colour can be inferred from DNA with sufficiently high predictive value. At present, Kayser and colleagues have published / have publications currently under review with relation to this. Once all papers are published the NFI will approach the Ministry with the necessary publications. When this will be presented to the *Tweede Kamer* to make a decision is unclear and depends on various factors. In the previous cases of eye and hair colour, this has taken several years, respectively, from application to approval.

10.7 FDP for unidentified human remains

There is no specific legal basis for FDP inference testing for unidentified human remains (it is not regulated for in the Code of Criminal Procedure), but rather it is part of the legal task of the police to try to identify unidentified persons in non-criminal cases. As such, police can ask for FDP for unidentified human remains without the approval of a judge or public prosecutor and can use the testing more flexibly with regards to the type of traits tested.

The Dutch Missing Persons DNA-database is operated by the NFI under the jurisdiction of the Dutch police. DNA-tests of unidentified and missing persons (and/or their family members) are funded by the police, as are FDP-testing or isotope testing on an unidentified body to assist the identification process. Because of this funding issue, and because of the question of whether an

FDP test would provide valuable information to any missing person case, the testing is not used often.

10.8 Open questions

- FDP is explicitly regulated in The Netherlands. Regulation is for the trait, not for the test (though a validated test is required to be published before a trait is permitted to be predicted). FDP for ancestry, eye colour and hair colour predictions are currently permitted. Additional EVCs can be added to this legislation by Royal Decree once it is demonstrated by scientific research and technological development that an EVC can be predicted from DNA and a DNA test has been produced and forensically validated. Skin colour is likely to be the next EVC to become approved in the next few years.
- One open question relates to whether age should be considered an EVC, and there are different opinions about this. For example, whilst the Minister of Justice stated that FDP can only be conducted for EVCs visible “from birth” – a statement which would exclude age inference testing from being conducted - this concept is not adhered to in the strictest of senses since hair and eye colour can change from birth.

11. United Kingdom

11.1 Introduction

In the UK, there is no explicit legislation governing which techniques can be used for forensic DNA analyses for crime scene DNA stains. The legislation that exists governs only the collection, processing and storage of DNA for forensic purposes. As such, according to the letter of the law, FDP is permitted. As is customary in the UK, the use of FDP is governed by various regulatory oversight bodies (see below). There has been little discussion about the possible use of FDP within these committees, and as far as we know, FDP is used very rarely, and at present, not by the police.

11.2 Relevant legislation

England and Wales (and Scotland/Northern Ireland) use the common law legal system. This means that, alongside legislation, formal law is produced in the courts and based on precedent (i.e., previous court decisions). Legislation relevant to FDP includes:

- The Police and Criminal Evidence Act (PACE) 1984 in England and Wales (in Scotland: the Criminal Procedure Act 1995; in Northern Ireland: Police and Criminal Evidence Order 1989) / Protection of Freedoms Act (POFA) 2012
- The Criminal Procedures and Investigation Act 1996 (legislation pertaining to conduct of a criminal investigation)

Relevant oversight bodies:

- The National DNA database (NDNAD) Strategy board is the overarching governance committee. Board members for this committee are representatives from the:
 - The Forensic Science Regulator
 - The Biometrics Commissioner
 - The Information Commissioner's Office (ICO) - tasked with data protection issues.
 - The Home Office Biometrics and Forensic Ethics Group (BFEG) - successor of the National DNA database Ethics Group

11.3 Regulation relating to the use of FDP

There is no statutory framework for the use of FDP, or on the use of any other forensic genetic analysis, such as DNA profiling. All statutory frameworks related to forensic genetic tests relate to the circumstances in which a sample can be taken from an individual, and the circumstances under which the findings of any forensic genetic tests conducted on the sample can be stored.

The UK operates an adversarial legal system and it is the police's role to gather evidence in a criminal case. As such FDP can be requested by police and forensic providers at their discretion. No formal requests need to be made to the courts. Though accreditation of any forensic laboratory process has to be received from UKAS (the national accreditation body for the United Kingdom), and any use of FDP (or any other forensic technique) has to first be negotiated and discussed with UKAS. The London Metropolitan Police also stated that they would consult with the National Strategy Board and the National DNA Database Biometrics and Forensics Ethics Group before using FDP, and have a gatekeeper/authorisation system (already put in place for Y-STR testing) to ensure there is a good understanding and communication of the findings at the police level when and if they start using FDP techniques. Experts did note that when they start using FDP there will be no clear distinction between using FDP as an investigative tool versus as evidence, since any techniques used within the investigation would have to be disclosed during a court case as evidence for counter argument, even if confirmation profiles prove the correct perpetrator had been apprehended.

Whilst there is no statutory framework in the UK, forensic technologies are overseen by a range of government committees. These include:

NDNAD Strategy board. This board provides governance and oversight over the operation of the National DNA Database and the national fingerprint database.⁷⁰ Its role is regulated for in the PACE 1984. Gary Pugh is the current chair of the Strategy Board. The Strategy Board comprises representatives of the National Police Chief's Council, the Home Office, the DNA Ethics Group, the Association of Police and Crime Commissioners, the Forensic Science Regulator (or her representative), the Information Commissioner's Office, the Biometrics Commissioner (or his representative), representatives from the police and devolved administrations of Scotland and Northern Ireland and such other members who may be invited.

The Home Office Biometrics and Forensics Ethics Group (BFEG). This Group provides independent ethical advice to Home Office ministers on issues related to the use of biometrics and forensics. The BFEG is sponsored by the Home Office. The remit of the group includes consideration of the ethical impact on society, groups and individuals of the capture, retention and use of human samples and biometric identifiers for purposes which fall within the purview of the

⁷⁰ <https://www.gov.uk/government/groups/national-dna-database-strategy-board>

Home Office, including the differentiation between, or identification of, individuals. The group is chaired by Chris Hughes.⁷¹

Forensic Science Regulator. This is a government appointment, though the regulator has no statutory rights. The role of the regulator is to ensure that the provision of forensic science services across the criminal justice system is subject to an appropriate regime of scientific quality standards. They have produced some guidance for stakeholders about how forensic technologies should be used and drawn upon, but this guidance contains nothing about FDP.

One of the Forensic Science Regulator's working groups is the DNA working group. This group's discussions have touched only lightly on the issue of FDP. This is because the working group is unlikely to consider FDP until it had been subject to a systematic discussion by the BFEG.

Biometrics Commissioner. This role was legislated for by the Protection of Freedoms Act 2012 to ensure compliance with said legislation. It is independent of government and has the role of ensuring data is being handled appropriately (including DNA data) and to keep under review the retention and use by the police of DNA samples, DNA profiles and fingerprints. The remit at the present time does not include the use of DNA for genetic phenotyping.

Data protection

This ICO explained that any use of FDP, or storage of FDP findings, would need to be GDPR and the The Police and Criminal Justice Data Protection Directive compliant, and that there would be a necessity of privacy impact assessments. There was also a discussion about: the point at which FDP findings become personal data; whether FDP findings are special category because of their genetic nature; how FDP findings should be stored and for how long; and whether FDP would fall under extra legislation related to AI/automated decision-making given the use of algorithms in FDP tests (for this latter point the ICO noted that guidance had been published at the European level by the article 29 working group - a collective body of all EU data protection authorities - but they were unsure whether this guidance covered FDP use/storage).

11.4 Situation regarding the use of FDP

In spite of the now closed UK's forensic science service being the first to develop an FDP test (for red hair), FDP is rarely used in the UK, and only ever as a last resort. A number of interviewees pointed out that the UK DNA profile database is very powerful (when searching the database, the chance of receiving a 'match' is much higher than in other countries) and so there is often very little use or value in using FDP.

⁷¹ The leader of WP5, Barbara Prainsack, has been a member of this group since 2014; she will resign at the end of 2017 due to her relocation to Austria.

The London Metropolitan Police are not using FDP, but have the technology and are waiting for the accuracy of the techniques to improve so that they can use FDP for serious crime and intelligence cases. Due to confidentiality, we could not determine whether other UK police Departments are using FDP.

Outside of the police, we are under the impression that a few companies have the FDP technology, but are not necessarily making use of it. Only one expert indicated they were using FDP, and this was for external (international) requests, including requests which had been subcontracted out from forensic providers to the expert. The types of tests conducted include eye and hair colour. Age estimation and ancestry inference tests have also been requested, of which a few have been conducted.

11.4.1 Age

There is no specific regulation forbidding FDP and, thus FDP for age inference is considered permitted.

11.4.2 Ancestry

There is no specific regulation forbidding FDP and, thus FDP for ancestry inference is considered permitted.

11.4.3 Appearance

There is no specific regulation forbidding FDP and, thus FDP for appearance inference is considered permitted.

11.5 Regulation of the storage of FDP findings in a national database

The relevant legislation relating to the storage of DNA includes:

Police and Criminal Evidence Act (PACE) 1984

The Police and Criminal Evidence Act regulates the UK national DNA database. It states who can take a DNA sample from an individual, and under what circumstances. The Act was written in the context of STR-DNA profiles only, and does not discuss any other form of DNA finding or analysis (such as FDP).

Protection of Freedoms Act (POFA) 2012

Whilst the PACE regulates who can take DNA samples and under what conditions, the Protection of Freedoms Act states the circumstances under which the DNA sample/data can be stored, for how long, and when it needs to be destroyed. The Act came into force in response to a Judgment

by the European Court of Human Rights (ECHR) and its remit was to ensure that the retention of DNA samples and data was proportionate to comply with the ECHR Judgment.

Given that both these Acts discuss DNA profiles, there seems to be no explicit regulation governing the storage of FDP findings in the national database.

11.5.1 Age

There is no explicit regulation for age prediction testing, and no implicit prohibition, so technically age prediction findings could be stored. Having said this, FDP is seldomly used in the UK, and FDP findings for age prediction are not stored in the national DNA database at present.

11.5.2 Ancestry

There is no explicit regulation for ancestry testing, and no implicit prohibition, so technically ancestry testing findings could be stored. Having said this, FDP is seldomly used in the UK, and FDP findings for ancestry testing are not stored in the national DNA database at present.

11.5.3 Appearance

There is no explicit regulation for appearance prediction testing, and no implicit prohibition, so technically appearance prediction findings could be stored. Having said this, FDP is seldomly used in the UK, and FDP findings for appearance prediction are not stored in the national DNA database at present.

11.6 Current policy discussions

- The National Strategy board has not yet discussed the use of FDP.
- The Home Office Biometrics and Forensic Ethics Group (BFEG) have had several discussions regarding the use of FDP.
- The ICO has not yet discussed the use of FDP.

11.7 FDP for unidentified human remains

It is thought that FDP for unidentified human remains are governed by the same absence of a statutory law as crime scene stains, but that police regulations are a little lighter for the former. In terms of data regulations for unidentified human remains, the ICO believes it would depend on who was processing the data as to whether the GDPR or the law enforcement regulation would be relevant - they noted that they are yet to figure this out, and there is quite a lot which falls between the two.

11.8 Open questions

- There is no legislation relevant to FDP in the UK, and so, in line with the UK's legal system, this means that FDP is permitted. There are a number of regulatory bodies which oversee forensic DNA technologies in general. These bodies are viewed as much more flexible than legislation and an appropriate mode of regulation. As yet these regulatory bodies have engaged little with the issue of FDP, and no recommendations, guidelines or regulations regarding the technology have been developed.

Summary

This Report has described how the European Union’s legal and regulatory framework, along with the legal and regulatory frameworks of eight European countries, accommodate the use of FDP, and the storage of FDP findings in a national database. Whilst doing so, it has highlighted any country-specific open questions and ambiguities which remain within these frameworks. These are summarised in the table below.

Table 6. Summary of the country-specific open questions which remain regarding the regulation of FDP

Country	Open Questions
Austria	<p>It is ambiguous as to whether Parliament intended to prohibit the use of informative markers for traits that are visible to the naked eye (legislators seem to have used the term "non-coding" synonymously with "non-informative"). It could be argued that markers that only disclose what can be seen with a naked eye are not 'informative'.</p>
France	<p>There is need for legal clarity regarding the regulatory situation of FDP in France. This is because at present the legislation, which has been interpreted as forbidding FDP, sits contrary to the <i>Cour de Cassation's</i> 2014 ruling, which permits FDP.</p> <p>The <i>Cour de Cassation</i> determined that 'morphological characteristics' can be examined by FDP, but does not define these characteristics. It is therefore ambiguous whether the court’s judgment only relates to FDP prediction testing for hair, skin and eye colour (the characteristics originally tested for in the Lyon rape case) or whether it allows for other characteristics to be tested for, such as ancestry.</p> <p>The <i>Cour de Cassation</i> concludes that the Civil Code Articles 16-10 and 16-11 are not applicable to FDP regulation because these Articles only relate to issues pertaining to respect and protection of the human body. This is confusing because we cannot identify anything in the legal text that suggests this.</p>
Germany	<p>At present, FDP is prohibited in Germany for criminal cases. Though there has been a proposed legislative plan to permit the identification of certain externally visible traits (EVCs), age and "biogeographical ancestry". Policy discussions are underway, and the topic is also the subject of discussions and criticism among stake holders and civil society organisations.</p> <p>There is ambiguity regarding the legal situation for using FDP for unidentified human remains for which FDP is certainly practiced.</p>
Poland	<p>FDP is practiced in Poland. This is because experts interpret their Police Act, which limits genetic analyses to non-coding regions, as only relating to analyses which will be stored in the national DNA database. However, there is no legal text which explicitly states this.</p> <p>Without regulation, there is no guidance regarding which phenotypic characteristics can be probabalistically tested for using FDP.</p>

Country	Open Questions
Spain	<p>There is no explicit law forbidding FDP in Spain, as such, FDP is practiced. Some experts do not see the need for legal reform since FDP is already being used. Other experts have called for law reform via the incorporation of an explicit law, arguing: that without the explicit law pertaining to FDP, it is happening without necessary legal and ethical discussion; an explicit law can ensure that only valid FDP tests are used; and legislation could ensure that FDP is only performed following a judicial order (which is deemed as appropriate given the potential for misuse).</p>
Sweden	<p>Current regulation interprets that FDP is permitted even though there is no explicit regulation pertaining to FDP. This status quo is seen as acceptable by some. For others, explicit regulation is necessary to: provide guidance about which FDP tests can be conducted; ensure those tests conducted are reliable; and/or determine which FDP findings should be communicated to the police/public. Not all agree with the need for regulation.</p>
The Netherlands	<p>FDP is explicitly regulated in The Netherlands. Regulation is for the trait, not for the test (though a validated test is required to be published before a trait is permitted to be predicted). FDP for ancestry, eye colour and hair colour predictions are currently permitted. Additional EVCs can be added to this legislation by Royal Decree once it is demonstrated by scientific research and technological development that an EVC can be predicted from DNA and a DNA test has been produced and forensically validated. Skin colour is likely to be the next EVC to become approved in the next few years.</p> <p>One open question relates to whether age should be considered an EVC, and there are different opinions about this. For example, whilst the Minister of Justice stated that FDP can only be conducted for EVCs visible “from birth” – a statement which would exclude age inference testing from being conducted - this concept is not adhered to in the strictest of senses since hair and eye colour can change from birth.</p>
United Kingdom	<p>There is no legislation relevant to FDP in the UK, and so, in line with the UK’s legal system, this means that FDP is permitted. There are a number of regulatory bodies which oversee forensic DNA technologies in general. These bodies are viewed as much more flexible than legislation and an appropriate mode of regulation. As yet these regulatory bodies have engaged little with the issue of FDP, and no recommendations, guidelines or regulations regarding the technology have been developed.</p>

This Report did not aim to describe the advantages and disadvantages of each of the legal frameworks, nor did it aim to provide an opinion about each of the frameworks, or discuss the potential need (or not) for regulation. Having said this, we welcome opinions about these issues, about the contents of this Report, and any other comments more broadly.

Glossary

Amelogenin: is a protein involved in the development of enamel. It is a single copy gene located on the X and Y chromosomes. Differences between the X and Y chromosome versions of the gene enable it to be used in sex determination of unknown human samples.

Autosomal chromosome: any chromosome which is not a sex-linked (X or Y) chromosome (termed gonosome).

Charter of Fundamental Rights of the European Union: sets out the full range of civil, political, economic and social rights of citizens and residents of the European Union (EU) and enshrines them into EU law. It was introduced to bring consistency and clarity to the rights established at different times and in different ways in individual EU Member States.

CI: otherwise known as confidence interval, is a range of values so defined that there is a specified probability that the value of a parameter lies within it.

Court of Justice of the European Union (CJEU): interprets EU law to make sure it is applied in the same way in all EU countries, and settles legal disputes between national governments and EU institutions. It can also, in certain circumstances, be appealed to by individuals, companies or organisations to take action against an EU institution, if they have grounds to argue that it has infringed their rights.

DNA: more formally known as deoxyribose nucleic acid, DNA is the self-replicating genetic material found in all living organisms. DNA is located on chromosomes in the cell nucleus, but a small amount can also be found in the mitochondria (mitochondrial DNA or mtDNA).

Eurojust: an agency of the European Union (EU) dealing with judicial co-operation in criminal matters.

European Court of Human Rights (ECHR): an international court established by the European Convention on Human Rights to hear applications where an EU member state has breached human rights provisions.

European Judicial Network (EJN): a network of contact points within the EU designed to facilitate judicial cooperation across borders. By helping to form and maintain contacts between agencies in member states.

European Network of Forensic Science Institutes (ENSFI): a network of experts aimed to share knowledge, exchange experiences and come to mutual agreements in the field of forensic science.

European Network of Forensic Science Institutes DNA Working Group: provides a forum for the validation, introduction and improvement of DNA analysis in forensic casework. It comprises members from over fifty organisations and 35 European countries.

European Public Prosecutor's Office (EPPO): an independent body of the European Union that investigates and prosecutes fraud against the EU budget and other crimes against the EU's financial interests.

European Standard Set (ESS): the core set of STR loci which are used in all national DNA databases in Europe.

European Union (EU): an economic and political union between 28 European member countries that together cover much of the continent.

Europol: supports the 28 EU Member States in their fight against terrorism, cybercrime and other serious and organised forms of crime..

Externally visible characteristics (EVCs): are a person's visible traits i.e., their appearance.

Familial searching: law enforcement using a DNA profile from an unknown person (obtained from a crime scene trace) to search against a national forensic DNA database to gain genetic information which indicates any relatives within the database of the person they seek to identify (i.e., a partial match of genetic information).

General Data Protection Regulation (GDPR): is the European Union's data protection framework which is directly enforceable in all member countries.

Haplotype: a group of alleles in an organism located together in a chromosomal region that are inherited together from a single parent

Mitochondrial genome: Mitochondria are structures within cells that convert the energy from food into a form that cells can use. Mitochondria contain a small amount of DNA, called mitochondrial DNA or mtDNA.

OLAF: The European Anti-Fraud Office (commonly known as OLAF, from the French *Office européen de lutte antifraude*).

Prüm: The Prüm framework mandates the exchange of data between EU member countries regarding DNA, fingerprints and vehicle registration of concerned persons, and to cooperate against terrorism.

RNA: more formally known ribonucleic acid, is a nucleic acid present in all living cells. Its principal role is to act as a messenger carrying instructions from DNA for controlling the synthesis of proteins.

Short tandem repeat (STR): a short sequence of DNA, normally 3-5 base pairs in length and typically positioned in the non-coding region of the genome, that are tandemly repeated numerous times. Individuals will vary with regard to how many times each of their STR motifs are repeated. STRs used in forensics are located in non-coding regions of DNA.

Single nucleotide polymorphism (SNP): a DNA sequence variation occurring when a single nucleotide in the genome differs between members of a species or paired chromosomes in an individual. For FDP, SNP markers are typically, but not necessarily, within coding regions of DNA.

Treaty of the Functioning of the European Union (TFEU): one of two primary Treaties of the European Union, alongside the Treaty on European Union. Formerly known as the EC Treaty, the Treaty of Rome or the Treaty establishing the European Community, the TFEU forms the detailed basis of EU law, by setting out the scope of the EU's authority to legislate and the principles of law in those areas where EU law operates.

Y-chromosome: one of two sex chromosomes (the other being the X chromosome), in mammals including humans, and many other animals. The Y chromosome is only present in males, who have one X and one Y chromosome, while females have two X chromosomes.

Appendix

EU.1 Europe

GDPR

Article 13

Information to be made available or given to the data subject

1. Member States shall provide for the controller to make available to the data subject at least the following information:

- (a) the identity and the contact details of the controller;
- (b) the contact details of the data protection officer, where applicable;
- (c) the purposes of the processing for which the personal data are intended;
- (d) the right to lodge a complaint with a supervisory authority and the contact details of the supervisory authority;
- (e)

the existence of the right to request from the controller access to and rectification or erasure of personal data and restriction of processing of the personal data concerning the data subject.

2. In addition to the information referred to in paragraph 1, Member States shall provide by law for the controller to give to the data subject, in specific cases, the following further information to enable the exercise of his or her rights:

- (a) the legal basis for the processing;
- (b) the period for which the personal data will be stored, or, where that is not possible, the criteria used to determine that period;
- (c) where applicable, the categories of recipients of the personal data, including in third countries or international organisations;
- (d) where necessary, further information, in particular where the personal data are collected without the knowledge of the data subject.

3. Member States may adopt legislative measures delaying, restricting or omitting the provision of the information to the data subject pursuant to paragraph 2 to the extent that, and for as long as, such a measure constitutes a necessary and proportionate measure in a democratic society with due regard for the fundamental rights and the legitimate interests of the natural person concerned, in order to:

- (a) avoid obstructing official or legal inquiries, investigations or procedures;
- (b) avoid prejudicing the prevention, detection, investigation or prosecution of criminal offences or the execution of criminal penalties;

Article 14

Right of access by the data subject

Subject to Article 15, Member States shall provide for the right of the data subject to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, access to the personal data and the following information:

- (a) the purposes of and legal basis for the processing;
- (b) the categories of personal data concerned;
- (c) the recipients or categories of recipients to whom the personal data have been disclosed, in particular recipients in third countries or international organisations;
- (d) where possible, the envisaged period for which the personal data will be stored, or, if not possible, the criteria used to determine that period;
- (e) the existence of the right to request from the controller rectification or erasure of personal data or restriction of processing of personal data concerning the data subject;
- (f) the right to lodge a complaint with the supervisory authority and the contact details of the supervisory authority;
- (g) communication of the personal data undergoing processing and of any available information as to their origin.

Article 15

Limitations to the right of access

1. Member States may adopt legislative measures restricting, wholly or partly, the data subject's right of access to the extent that, and for as long as such a partial or complete restriction constitutes a necessary and proportionate measure in a democratic society with due regard for the fundamental rights and legitimate interests of the natural person concerned, in order to:

- (a) avoid obstructing official or legal inquiries, investigations or procedures;
- (b) avoid prejudicing the prevention, detection, investigation or prosecution of criminal offences or the execution of criminal penalties;
- (c) protect public security;
- (d) protect national security;
- (e) protect the rights and freedoms of others.

2. Member States may adopt legislative measures in order to determine categories of processing which may wholly or partly fall under points (a) to (e) of paragraph 1.

3. In the cases referred to in paragraphs 1 and 2, Member States shall provide for the controller to inform the data subject, without undue delay, in writing of any refusal or restriction of access and of the reasons for the refusal or the restriction. Such information may be omitted where the provision thereof would undermine a purpose under paragraph 1. Member States shall provide for the controller to inform the data subject of the possibility of lodging a complaint with a supervisory authority or seeking a judicial remedy.

4. Member States shall provide for the controller to document the factual or legal reasons on which the decision is based. That information shall be made available to the supervisory authorities.

Police Directive

(42): At least the following information should be made available to the data subject: the identity of the controller, the existence of the processing operation, the purposes of the processing, the right to lodge a complaint and the existence of the right to request from the controller access to and rectification or erasure of personal data or restriction of processing. This could take place on the website of the competent authority. In addition, in specific cases and in order to enable the exercise of his or her rights, the data subject should be informed of the legal basis for the processing and of how long the data will be stored, in so far as such further information is necessary, taking into account the specific circumstances in which the data are processed, to guarantee fair processing in respect of the data subject.

(43): A natural person should have the right of access to data which has been collected concerning him or her, and to exercise this right easily and at reasonable intervals, in order to be aware of and verify the lawfulness of the processing. Every data subject should therefore have the right to know, and obtain communications about, the purposes for which the data are processed, the period during which the data are processed and the recipients of the data, including those in third countries. Where such communications include information as to the origin of the personal data, the information should not reveal the identity of natural persons, in particular confidential sources. For that right to be complied with, it is sufficient that the data subject be in possession of a full summary of those data in an intelligible form, that is to say a form which allows that data subject to become aware of those data and to verify that they are accurate and processed in accordance with this Directive, so that it is possible for him or her to exercise the rights conferred on him or her by this Directive. Such a summary could be provided in the form of a copy of the personal data undergoing processing.

(44): Member States should be able to adopt legislative measures delaying, restricting or omitting the information to data subjects or restricting, wholly or partly, the access to their personal data to the extent that and as long as such a measure constitutes a necessary and proportionate measure in a democratic society with due regard for the fundamental rights and the legitimate interests of the natural person concerned, to avoid obstructing official or legal inquiries, investigations or procedures, to avoid prejudicing the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, to protect public security or national security, or to protect the rights and freedoms of others. The controller should assess, by way of a concrete and individual examination of each case, whether the right of access should be partially or completely restricted.

A.1 Austria

A.1.1 Security Police Act (SPG)

Translation of the relevant section of the Austrian Security Police Act - the Austrian legislation contains regulation on the use of forensic DNA technologies

Identification Service

Definitions

Section 64 (1) Identification Service means establishing personal data by identification measures as well as further processing and forwarding these data.

(2) Identification measures are technical procedures for establishing distinguishing marks and characteristics of an individual permitting to recognise this individual; in particular taking papillary ridge prints, mouth swabs, making images, establishing physical characteristics, taking size and weight or voice or handwriting samples.

(3) Recording means establishing personal data through identification measures, in which the person concerned has to cooperate.

(4) identification data are personal data which have been established through identification measures.

(5) The establishment of a person's legitimate personal particulars is a confirmed and plausible assignment of identification data to an individual's name, sex, date of birth, place of birth, and parents' names.

(6) Insofar as the admissibility of a measure pursuant to this chapter depends on the suspicion that the person concerned committed a judicially punishable offence, this precondition continues to be valid also after a final sentence for the respective criminal offence (section 16 paragraph 2).

DNA Profiling

Section 67 (1) Identification measures, where a DNA profile of a person should be established, may be generated in the course of recording if the person concerned is suspected of having committed a judicially punishable intentionally offence punishable by custodial sentence for a period of at least one year, and if in view of the nature of the crime or the personality of the suspect, it can be expected that the individual may leave biological evidence in the commission of dangerous acts in future, enabling his/her identification on the basis of the genetic information obtained. Insofar as this is necessary to assess existing biological evidence, such identification measures of individuals may also be obtained in cases outlined in section 65 paragraph 2, are also admissible. In other respects section 65 paragraph 4 to 6 obtained.

(1a) In the framework of identification measures regarding missing persons (section 65a) and dead bodies (section 66) DNA profiles may also be generated.

(2) Genetic information obtained by identification measures may only be analysed for the purposes of the identification service. The molecular genetic examination is to be carried

out by a service provider, to whom the entire material to be examined but not the identity data of the person concerned must be handed over.

(3) The law enforcement authorities shall stipulate that the service provider examines only those parts of the DNA that serve for identification and that the material to be examined is destroyed if the law enforcement authority is obliged to delete identification data.

A.1.2 Dr Reinhard Schmid's letter

Dr Reinhard Schmid is the custodian of the Austrian DNA and biometric databases at the Ministry of the Interior. Below we present his letter (in Austrian) which, among other things, outlines his views on the regulation and use of FDP in Austria. Relevant sections of this text, as they pertain to FDP, have been translated and appear in the main body of the Report.

Sehr geehrte Damen und Herren;

Zur ergangenen Anfrage über bestehende Rechtsgrundlagen in Zusammenhang mit phänotypischen DNA Untersuchungsmethoden darf folgende Information zur Rechtslage in Österreich bereitstellen:

1.) Wissenschaftliche Nutzung

Österreich hat, was wissenschaftliche Arbeiten betrifft, eine eigenständige gesetzliche Regelung im Sicherheitspolizeigesetz, welche uns die Bereitstellung der bei uns gespeicherten Daten für solche Arbeiten in anonymisierter Form. Solange diese gesetzlich gebotene Anonymisierung gewährleistet ist, ist nach ho. Rechtsinterpretation auch die Unterstützung von phänotypischen wissenschaftlichen Arbeiten an bestimmte wissenschaftliche Bedarfsträger erlaubt. Solche anonymen Datenbereitstellungen sind aber ausschließlich an inländische Universitäten und anderen Bundesministerien zulässig.

Die Rechtslage ist aber selbst in diesem wissenschaftlichen Bereich nicht absolut klar formuliert, da ja grundsätzlich für operative Auswertungen der Sicherheits- und Justizbehörden die Auswertung von codierten DNA Markern in Österreich zweifelsfrei unzulässig ist.

Solche juristischen Gegenargumente wären aber mangels entsprechend vorhandener höchstgerichtlicher Entscheidungen und auch noch nie aufgeworfener Problemstellung, derzeit sicherlich noch eine Interpretationsfrage, die juristisch für anonymisierte wissenschaftliche Zwecke widerlegbar sind.

Dies ergibt sich dahingehend, dass der österreichische Gesetzgeber die Nutzung von anonymisierten DNA Daten sogar mit einer für das österreichische Rechtssystem völlig unüblichen dezidierten Rechtsbestimmung vorgesehen hatte. Der Zweck einer solchen

Regelung kann daher wohl nur derjenige sein kann, denkbare wissenschaftliche Weiterentwicklungen zu ermöglichen, da dies sonst eine inhaltsleere Bestimmung wäre und eine solche nach der Kernzielrichtung des Sicherheitspolizeigesetzes jedenfalls auch in Richtung möglicher Weiterentwicklungen von „Wiedererkennbarkeit“ gerade im Hinblick auf ohnehin für jeden erkennbare äußerliche Merkmale möglich sein muss.

Unzweifelhaft wäre aber, wenn der politische Wille zu einer operativen Nutzung angedacht werden sollte, unter Berücksichtigung datenschutzrechtlichen Grundforderung, wie Zweckbestimmung, Sinnhaftigkeit und Notwendigkeit von Datenverarbeitungen und unter Berücksichtigung von Gesichtspunkten heute technisch möglicher DNA Technologien, welche zum Zeitpunkt der Schaffung dieser Rechtsgrundlagen noch gar nicht möglich waren, eine weiterführende rechtliche Klarstellung der Nutzungszulässigkeit erforderlich.

Die österreichische Rechtslage zur Auswertung von biologischem Material dient vorwiegend zu Zwecken der Straftatenklärung und der Verhinderung von weiteren Straftaten durch Präventivwirkung unserer Datenbanken, aber auch für andere Zwecke (z.B. Identifizierung von Vermissten und unbekanntem Leichen). Sie ist grundsätzlich extrem stark an der Zielrichtung „Wiedererkennung“ und der unbedingten Vermeidung und Nutzungsverbot von Erkenntnissen, welche den höchstpersönlichen Lebensbereich von Personen betrifft (Präpositionen zu möglichen Krankheiten, mögliche Verhaltensmuster von Personen) getragen. Es soll jedenfalls – selbst wenn dies zu Zwecken der Straftatenklärung und Vermeidung weiterer Straftaten dienen könnte vermieden werden, dass die dafür zuständigen Behörden „einen gläsernen Menschen“ durch derartige Methoden erkennen könnten.

Die derzeitige wissenschaftliche Entwicklungen und zwischenzeitliche technische DNA Analysemethoden gehen aber auch nicht in Richtung einer Analyse solcher hochsensibler persönlicher Bereiche wie Krankheitsneigungen, sondern in Richtung Wiedererkennung „äußerlicher Merkmale“ die eine Ermittlungsunterstützung darstellen. Solche äußerlich erkennbaren Merkmale sind nach ho. Ansicht auch keine sensiblen Informationen sondern grundsätzlich auch jedem Augenzeugen einer Straftat äußerlich erkennbar (z.B. Haarfarbe) und wird dazu auch jeder Zeuge bei Einvernahmen befragt werden.

Weiterführende Untersuchungsmethoden etwa zu krankheitsbedingte Präpositionen, wären wohl auch aus Gründen der Verhältnismäßigkeit anders zu beurteilen und könnten hier sicherlich auch ethische Bedenken entstehen.

Erläuterung der derzeitigen Rechtslage und historischen Hintergrundinformationen zu dieser Fragestellung an Hand der Rechtstexte und Materialien in Österreich:

Rechtstextauszug Sicherheitspolizeigesetz (SPG) in der Fassung nach der Novelle 2016 (Inkrafttreten 01.08.2016):

Übermittlung erkennungsdienstlicher Daten zu wissenschaftlichen Zwecken

§ 72 Soweit dies mit den Grundsätzen einer sparsamen, wirtschaftlichen und zweckmäßigen Verwaltung vereinbar ist und nach Maßgabe der technischen Erfordernisse der Führung der erkennungsdienstlichen Evidenzen, können erkennungsdienstliche Daten den inländischen Universitäten und den Bundesministerien auf Verlangen zur Auswertung bei nicht personenbezogenen wissenschaftlichen Arbeiten übermittelt werden.

Ergänzend darf darauf hingewiesen werden, dass nach den Bestimmungen des österreichischen Datenschutzgesetzes, welche zu dieser Bestimmung sogar im Verfassungsrang abgesichert wurden, mit ausdrücklicher Zustimmung des Betroffenen in jedem Fall auch sein biologisches Material für wissenschaftliche Zwecke genutzt werden dürfte. Eine derartige Verwendung ist auch ohne ausdrückliche gesetzliche Grundlage möglich, da sie jedenfalls nicht sittenwidrig wäre (Grundrecht des Betroffenen auf Verzicht von Datenschutzrechten). Diese Zustimmungsregelungen entsprechen auch den für derartige freiwilligen Datenverwendung relevanten Bestimmungen des Artikel 8 der Europäischen Menschenrechtskonvention und des Artikel 8 der Europäischen Grundrechtscharta der EU. DNA Daten entsprechen aber in diesem Bereich jedenfalls „sensiblen Daten“ im Sinne des DSG und auch im Sinne von EU Datenschutzbestimmungen.

In Beschwerdefällen würde bei solchen Zustimmungen von den Gerichten sehr genau geprüft werden, ob hier eine ausreichende Information vorlag und damit wirklich eine täuschungsfreie und ausdrücklich gewünschte Zustimmung der Datenverwendung durch den Betroffenen vorlag.

Auszugsweise Rechtstextauszug Datenschutzgesetz (DSG):

Artikel 1

(Verfassungsbestimmung)

Grundrecht auf Datenschutz

§ 1. (1) Jedermann hat, insbesondere auch im Hinblick auf die Achtung seines Privat- und Familienlebens, Anspruch auf Geheimhaltung der ihn betreffenden personenbezogenen Daten, soweit ein schutzwürdiges Interesse daran besteht. Das Bestehen eines solchen Interesses ist ausgeschlossen, wenn Daten infolge ihrer allgemeinen Verfügbarkeit oder wegen ihrer mangelnden Rückführbarkeit auf den Betroffenen einem Geheimhaltungsanspruch nicht zugänglich sind.

(2) Soweit die Verwendung von personenbezogenen Daten nicht im lebenswichtigen Interesse des Betroffenen oder mit seiner Zustimmung erfolgt, sind Beschränkungen des Anspruchs auf Geheimhaltung nur zur Wahrung überwiegender berechtigter Interessen eines anderen zulässig, und zwar bei Eingriffen einer staatlichen Behörde nur auf Grund

von Gesetzen, die aus den in Art. 8 Abs. 2 der Europäischen Konvention zum Schutze der Menschenrechte und Grundfreiheiten (EMRK), BGBl. Nr. 210/1958, genannten Gründen notwendig sind.

Schutzwürdige Geheimhaltungsinteressen bei Verwendung sensibler Daten

§ 9. Schutzwürdige Geheimhaltungsinteressen werden bei der Verwendung sensibler Daten ausschließlich dann nicht verletzt, wenn

.....

6. der Betroffene seine Zustimmung zur Verwendung der Daten ausdrücklich erteilt hat, wobei ein Widerruf jederzeit möglich ist und die Unzulässigkeit der weiteren Verwendung der Daten bewirkt,

.....

2.) Nutzung in Routinefällen zu Straftatenklärung und Vermeidung

Für eine Praxisanwendung im Sinne von kriminalpolizeilichen Routineuntersuchungen wäre wie bereits angeführt, sowohl die DNA Analyse als auch die Nutzung der Erkenntnisse die daraus gewonnen werden, derzeit in Österreich unzulässig.

Siehe dazu die derzeit geltenden Rechtstexte die sowohl Sicherheits- als auch Justizbehörden betreffen:

Rechtstextauszug SPG in der Fassung nach der Novelle 2016 (Inkrafttreten 01.08.2016):

DNA-Untersuchungen

§ 67. (1) Eine erkennungsdienstliche Behandlung, bei der die DNA eines Menschen ermittelt werden soll, ist zulässig, wenn der Betroffene im Verdacht steht, eine strafbare Handlung gegen die sexuelle Integrität und Selbstbestimmung oder eine mit mindestens einjähriger Freiheitsstrafe bedrohte vorsätzliche gerichtlich strafbare Handlung begangen zu haben und wegen der Art oder Ausführung der Tat oder der Persönlichkeit des Betroffenen zu befürchten ist, er werde gefährliche Angriffe begehen und dabei Spuren hinterlassen, die seine Wiedererkennung auf Grund der ermittelten genetischen Information ermöglichen würden. Soweit dies zur Auswertung vorhandener DNA-Spuren erforderlich ist, darf eine solche erkennungsdienstliche Behandlung auch bei Menschen iSd § 65 Abs. 2 erfolgen. Im Übrigen gilt § 65 Abs. 4 bis 6.

(1a) Eine erkennungsdienstliche Maßnahme in Bezug auf Abgängige (§ 65a) und an Leichen (§ 66) darf auch die Ermittlung der DNA umfassen.

(2) Genetische Information, die durch erkennungsdienstliche Maßnahmen ermittelt wurde, darf ausschließlich für Zwecke des Erkennungsdienstes ausgewertet werden. Die

molekulargenetische Untersuchung hat durch einen Dienstleister zu erfolgen, dem zwar das gesamte Untersuchungsmaterial auszufolgen, nicht aber erkennungsdienstliche Identitätsdaten des Betroffenen zu übermitteln sind.

(3) Die Sicherheitsbehörden haben vertraglich dafür vorzusorgen, daß der Dienstleister nur jene Bereiche in der DNA untersucht, die der Wiedererkennung dienen, sowie dafür, daß er das Untersuchungsmaterial vernichtet, wenn die Sicherheitsbehörde zur Löschung der erkennungsdienstlichen Daten verpflichtet ist.

Auszugsweise Rechtstextauszug Strafprozessordnung (StPO):

Identitätsfeststellung, Durchsuchung von Orten und Gegenständen, Durchsuchung von Personen, körperliche Untersuchung und molekulargenetische Untersuchung

Definitionen

§ 117. Im Sinne dieses Gesetzes ist

1. „Identitätsfeststellung“ die Ermittlung und Feststellung von Daten (§ 4 Z 1 DSGVO 2000), die eine bestimmte Person unverwechselbar kennzeichnen,

.....

4. „körperliche Untersuchung“ die Durchsuchung von Körperöffnungen, die Abnahme einer Blutprobe und jeder andere Eingriff in die körperliche Integrität von Personen,

5. molekulargenetische Untersuchung“ die Ermittlung jener Bereiche in der DNA einer Person, die der Wiedererkennung dienen.

Körperliche Untersuchung

§ 123. (1) Eine körperliche Untersuchung ist zulässig, wenn

1. auf Grund bestimmter Tatsachen anzunehmen ist, dass eine Person Spuren hinterlassen hat, deren Sicherstellung und Untersuchung für die Aufklärung einer Straftat wesentlich sind,

.....

(2) Eine körperliche Untersuchung nach Abs. 1 Z 1 ist auch an Personen zulässig, die einem durch bestimmte Merkmale individualisierbaren Personenkreis angehören, wenn auf Grund bestimmter Tatsachen anzunehmen ist, dass sich der Täter in diesem Personenkreis befindet und die Aufklärung einer mit mehr als fünf Jahren Freiheitsstrafe bedrohten Straftat oder eines Verbrechens nach dem 10. Abschnitt des Strafgesetzbuches andernfalls wesentlich erschwert wäre.

(3) Eine körperliche Untersuchung ist von der Staatsanwaltschaft auf Grund einer gerichtlichen Bewilligung anzuordnen. Bei Gefahr im Verzug kann die Untersuchung auch auf Grund einer Anordnung der Staatsanwaltschaft durchgeführt werden, doch hat die Staatsanwaltschaft in diesem Fall unverzüglich die gerichtliche Bewilligung einzuholen. Wird diese nicht erteilt, so hat die Staatsanwaltschaft die Anordnung sofort zu widerrufen und das Ergebnis der körperlichen Untersuchung vernichten zu lassen. Einen Mundhöhlenabstrich kann die Kriminalpolizei jedoch von sich aus abnehmen.

.....

Molekulargenetische Untersuchung

§ 124. (1) Zur Aufklärung einer Straftat ist es zulässig, einerseits biologische Spuren und andererseits Material, das einer bestimmten Person zugehört oder zugehören dürfte, molekulargenetisch zu untersuchen, um die Spur einer Person zuzuordnen oder die Identität einer Person oder deren Abstammung festzustellen, und mit nach diesem Gesetz oder nach dem Sicherheitspolizeigesetz rechtmäßig gewonnenen Ergebnissen molekulargenetischer Untersuchungen abzugleichen.

(2) Eine molekulargenetische Untersuchung ist von der Staatsanwaltschaft auf Grund einer gerichtlichen Bewilligung anzuordnen, sofern es sich nicht bloß um eine biologische Tatortspur handelt; eine solche kann die Kriminalpolizei von sich aus untersuchen lassen.

(3) Mit der molekulargenetischen Untersuchung ist ein Sachverständiger aus dem Fachgebiet der Gerichtlichen Medizin oder der Forensischen Molekularbiologie zu beauftragen. Diesem ist das Untersuchungsmaterial in anonymisierter Form zu übergeben. Im Übrigen ist dafür Sorge zu tragen, dass Daten aus molekulargenetischen Untersuchungen nur insoweit einer bestimmten Person zugeordnet werden können, als dies für den Untersuchungszweck (Abs. 1 und 4) erforderlich ist.

(4) Untersuchungsmaterial, das einer bestimmten Person zugehört oder zugehören dürfte, und die Ergebnisse der Untersuchung dürfen nur so lange verwendet und verarbeitet werden, als die Zuordnung zur Spur oder die Feststellung der Identität oder der Abstammung nicht ausgeschlossen ist; danach sind sie zu vernichten.

Sicherheitspolizeiliche Vorschriften (§§ 65 bis 67, 75 SPG) bleiben hievon unberührt.

(5) Daten, die auf Grund dieser Bestimmung ermittelt wurden, sind den Sicherheitsbehörden auf deren Verlangen zu übermitteln, soweit Ermittlung und Verarbeitung dieser Daten nach sicherheitspolizeilichen Vorschriften (§§ 65 bis 67, 75 SPG) zulässig wäre.

2.1. Rechtliche Bewertung dieser Bestimmungen in der StPO:

In der Rechtstextzusammenstellung der Strafprozessordnung wurde eine etwas umfassendere Einbeziehung vorgenommen, da sich in diesen Rechtstextauszügen die für Nichtjuristen nicht immer leicht zu erkennenden Grundlagen für die mögliche Durchführung von „DNA Massenscreeningverfahren“ bei Vorliegen bestimmter schwerer Straftaten (§ 123 Abs. 2 StPO) unter Richtervorbehalt (§ 123 Abs. 3 StPO) in Verbindung mit dem § 124 StPO finden.

Man könnte hier nach oberflächlicher Betrachtung all dieser Bestimmungen nur auf Grund des Rechtstextes durchaus auch zum Schluss kommen, dass die Analyse und Nutzung von DNA Analysemethoden auch in Richtung von allgemeinen äußerlich erkennbaren Merkmalen einer Person durchaus zulässig sein könnte, da ja immer vom Erfordernis und Zielrichtung einer „Wiedererkennung“ gesprochen wird.

Unter den im Verhältnis zu den Bestimmungen des SPG einerseits einschränkenden Bedingungen der StPO (schwere Straftaten, Richtervorbehalt) wird auch eine inhaltlich zum SPG extrem erweiterten Zielrichtung und Nutzungsberechtigung (.....einem durch bestimmte Merkmale individualisierbaren Personenkreis angehören, wenn auf Grund bestimmter Tatsachen anzunehmen ist, dass sich der Täter in diesem Personenkreis befindet.....)

Ein solcher „einschränkender Personenkreis“ könnte mitunter ja auch als „Personen die braune Haare und blaue Augen verstanden werden.

Tatsächlich war aber, wie aus den Materialien zum Gesetz zu entnehmen ist, mit solchem einschränkenden Personenkreis nicht eine auf phänotypische ausgerichtete biologisch bedingte Einschränkungsmöglichkeit, sondern vielmehr eine kriminalistisch-ermittlungstechnische Einschränkungsmöglichkeit, wie sie sich etwa hauptsächlich neben zulässigerweise ermittelten Informationen die sich auch aus nichtcodierten DNA Informationen ergeben können (z.B. männlicher Person) vorwiegend aus Ermittlungseinschränkungen wie etwa Zeugenaussagen, Zeitprofilen, Geoprofiling oder klassischen kriminalpsychologisches Täterprofiling gedacht, welche den Zweck haben soll, die möglichen Probanden eines solchen Massenscreeningverfahrens in sinnvoller Weise einzuschränken.

Dazu auszugsweise aus diesen Materialien:

Parlamentarische Materialien zum Strafprozessreformgesetz 2004 (elementare STPO Novelle mit Inkrafttreten am 01.08.2008 mit welcher unter anderem das österreichische Untersuchungsrichtermodell in ein Staatsanwaltschaftsmodell umgewandelt wurde) - 294 der Beilagen XXII. GP - Regierungsvorlage – Materialien - Erläuterungen

Auszugsweise aus den Erläuterungen zu § 123 Abs. 2 StPO:

„Durch Abs. 2 soll die einzelfallbezogene Betrachtung auf jene Fälle erweitert werden, in denen die Gewinnung von Daten eines bestimmten, näher individualisierten Personenkreises zur Durchführung von Vergleichsuntersuchungen mit am Tatort oder sonst im eindeutigen Zusammenhang mit der aufzuklärenden Straftat aufgefundenen Spuren erforderlich erscheint. Der Verdacht bezieht sich in diesem Fall nicht auf eine bestimmte Person, sondern auf einen nach bisherigen Ermittlungsergebnissen – durch bestimmte, den mutmaßlichen Täter kennzeichnende, Merkmale – eingeschränkten Personenkreis. Eine solche „Reihenuntersuchung“ soll jedoch nur zur Aufklärung einer strafbaren Handlung, die mit mehr als fünf Jahren Freiheitsstrafe bedroht ist, oder eines Sexualverbrechens zulässig sein.“

Auszugsweise aus den Erläuterungen zu § 124 Abs. 1 StPO:

„.....Da bei jeder strafprozessualen Maßnahme sicherzustellen ist, dass die Grenzen beachtet werden, in denen der Einsatz moderner Technik und naturwissenschaftlicher Neuerungen rechtsstaatlich unbedenklich ist, sollen für die strafprozessuale Nutzung dieser Methode klare Vorschriften geschaffen werden. Diese haben die Voraussetzungen und Beschränkungen, die sich für den Einzelnen aus der Durchführung einer solchen Untersuchung ergeben, festzuschreiben und den Umfang der Nutzung der gewonnenen Ergebnisse einzugrenzen, um den in weiten Teilen der Bevölkerung anzutreffenden, mit der Gentechnik ganz allgemein verbundenen Befürchtungen entgegenzuwirken.“

.....

„Aus dem strafprozessualen Verwendungszweck ergibt sich im Übrigen, dass weiterführende Untersuchungen, etwa zu wissenschaftlichen Forschungszwecken oder zu einer über den Aufklärungszweck hinausgehenden Untersuchung im Hinblick auf das Erbmateriale und dadurch bedingte Krankheitsverläufe, unzulässig sind bzw. nur bei Vorliegen der hierfür geltenden Bestimmungen des Gentechnikgesetzes vorgenommen werden dürfen.“

.....

2.1.1. Die zeitlich zum SPG auch neuere Strafprozessordnung trifft hier daher folgende rechtliche Kernaussagen:

- Klare Zweckbeschränkung auf individuell mögliche Identifizierbarkeit für strafprozessuale Zwecke
- Eine Identifizierungsunterstützung nur durch Einschränkung auf Personen z.B. „mit braunen Haaren“ wäre nicht ausreichen individuell.

- Erweiterte DNA Nutzungsmöglichkeiten auch durch unstrittig mögliche Abstammungsgutachten und Analysen möglich. Diese Möglichkeiten gibt es aber auch durch für Datenverarbeitungen nach dem SPG, wenngleich das dort nicht gleichartig klar formuliert ist.
- StPO Erfassungen haben keine Einschränkungen nur auf Tatverdächtige, sondern ist die Anwendung auch für sehr weit gefasste Personenkreise „möglicher Tatverdächtiger“ oder auch Personen, die nur mit einer Straftat in Verbindung stehen könnten“. Die Einschränkung potentieller Tatverdächtiger muss sich aber grundsätzlich aus Ermittlungsinformationen ergeben.
- Keine Nutzungsmöglichkeit von durch Massenscreeningverfahren erfassten biologischen Daten für wissenschaftliche Zwecke.
- Diese einschränkende Bestimmung wird aber in Bezug auf Daten von Tatverdächtigen oder auch Tatortspuren durch die Übergabeverpflichtungen des § 124 Abs. 5 StPO, der im Auftrag der Justizbehörden erhobenen Daten zur an die Sicherheitsbehörden, bei Vorliegen der Voraussetzungen nach dem Sicherheitspolizeigesetz und nach den dortigen Rechtsgrundlagen und Speicherfristen stark relativiert.
- Wenn die Daten in der DNA Datenbank des Innenministeriums gespeichert werden (was bei allen offenen Spuren und auch bei dringend Tatverdächtigen zwingend erforderlich ist und wozu die Sicherheitsbehörden auch einen Rechtsanspruch auf Datenbereitstellung durch die Justizbehörden haben (wenn die gesetzlichen Voraussetzung der Erfassung und Verarbeitung nach dem SPG vorliegen). Damit geht auch die datenschutzrechtliche Verantwortlichkeit auf die Sicherheitsbehörden über und unterliegen weitere Datenverarbeitungen wie etwa Löschungsbestimmungen ausschließlich dem Sicherheitspolizeigesetz und dessen Rechtsregime. Damit ist auch der datenschutzrechtliche Auftraggeber und Datenbesitzer nicht mehr eine Justizbehörde. Es gilt das Rechtsregime des SPG. Dieses sieht aber mögliche Datennutzungen zu wissenschaftlichen Zwecken unter bestimmten Voraussetzungen wiederum ausdrücklich vor.
- In der Praxis spielt das aber ohnehin nur bei Spurenmaterial eine Rolle. Erfassungen von Personen werden in Österreich faktisch ohnehin ausschließlich nach dem Sicherheitspolizeigesetz und niemals nach Aufträgen der Justizbehörden durchgeführt.

2.2. Rechtliche Bewertung dieser Bestimmungen im SPG:

Wie angeführt finden sich die wesentlichsten Bestimmungen für DNA Analysen, insbesondere von Verdächtigen, in Österreich nicht in der Strafprozessordnung, sondern im Sicherheitspolizeigesetz. Dieses dient in der Ziel- und Zweckbestimmung primär nicht pönalen strafprozessualen Zielrichtungen, sondern vorwiegend dem Gedanken zukünftige Straftaten durch gesicherte Identifizierungsmöglichkeiten zu vermeiden. Damit verbunden

gibt es auch sehr lange Speichermöglichkeiten und sehr unbürokratische auch zwangsweise durchsetzbare Erfassungsmöglichkeiten von Verdächtigen. Der Zugang zu den Daten ist aber sehr stark begrenzt und nur für diese Zwecke zulässig. So ist in der österreichischen Rechtsordnung etwa auch ausdrücklich abgesichert, dass DNA Profile die nach dem SPG erfasst wurden, selbst bei vorliegendem Richterauftrag etwa bei erforderlichen Abstammungsgutachten zum Gemeinwohl eines Kindes, nicht bereitgestellt werden. Dieses Bereitstellungsverbot wurde auch schon durch eine Entscheidung eines Oberlandesgerichtes bestätigt. In einem konkreten Verfahren hatte ein Zivilgericht in einem solchen Abstammungsverfahren zur Bestimmung von Unterhaltsansprüchen die Herausgabe der Profile mit Beschluss vom Bundeskriminalamt erzwingen wollen. Die Datenbereitstellung wurde mit Hinweis auf die Rechtslage des SPG verweigert. Im Rechtsmittelverfahren wurde hier der Rechtsansicht des Bundeskriminalamtes bestätigt.

Bis vor kurzem (bis zur vorletzten SPG Novelle, die mit 01.03.2016 in Kraft trat) gab es in Österreich keine dezidierte Rechtsgrundlage für die Verarbeitung von Spuren in Datenbanken. Diese wurden in der Vergangenheit rechtlich immer nur als eine Teilmenge von personenbezogenen Daten die nur noch keinem Personendatensatz zugeordnet werden können gewertet und kein spezifischer Regelungsbedarf gesehen.

Mit heutigen datenschutzrechtlichen Standards und Determinierungsgeboten betreffend der Verarbeitung von personenbezogenen Daten in Informationsverbundsystemen im Sinne des österreichischen Datenschutzgesetzes, war das aber auf Dauer argumentativ nicht aufrecht zu erhalten und führte dieser Umstand auch immer wieder zur rechtlichen Grundsatzdiskussionen. Es gibt daher seit dem März auch eine ausdrückliche Rechtsbestimmung über die Verarbeitung von Spurendaten (§ 75 Abs. 1a SPG), womit nunmehr auch hier eine Klarstellung vorgenommen wurde.

Es darf darauf hingewiesen werden, dass mit der erstmaligen Schaffung von ausdrücklichen Regelungen für DNA Analysen mit der Novelle diese Bestimmungen noch im § 64 SPG aufgenommen wurden. Die DNA Analytik wurde zu Beginn der operativen Auswertungen im Jahr 1997 aus rechtlicher Sicht nur als eine der im Sicherheitspolizeigesetz des Jahre 1993 beispielhaft aufgezählten Identifizierungsmethoden gewertet, wie sie etwa auch die Anfertigung von Lichtbildern, Fingerabdrücken, Beschreibung einer Person, Stimmproben usw. darstellen können.

Erst 1999 wurde dann durch die höhere Sensibilität derartiger DNA Daten mit grundsätzlich damals auch möglichen codierten Datenauswertungen aus dem biologischen Material nicht nur in Österreich sondern faktisch in allen Staaten, welche DNA Analytik einsetzten und die Daten in Datenbanken speicherten, eigenständige und genauer definierte Bestimmungen für die DNA Analyse und DNA Profilnutzung kreiert. Der Hauptgrund lag hier gerade darin solche codierten Analysen zu untersagen.

Es gibt zwischenzeitlich zumindest in Europa auch nur mehr ganz wenige Staaten, welche noch keine solchen dezidierten DNA Gesetzgebungsregelungen haben. Solche Staaten (z.B. Westbalkanstaaten) schaffen aber gerade solche Rechtsgrundlagen, wenn sie einen EU Beitritt anstreben.

Parlamentarische Materialien zur SPG Novelle 1998:

1479 der Beilagen zu den Stenographischen Protokollen des Nationalrates XX. GP

19. Dem § 64 wird folgender Abs. 7 angefügt:

“(7) Genetische Information, die durch erkennungsdienstliche Maßnahmen ermittelt worden ist, darf ausschließlich für Zwecke des Erkennungsdienstes ausgewertet werden. Sofern die Sicherheitsbehörden mit der Durchführung von molekulargenetischen Untersuchungen Dienstleister beauftragen, haben sie das Untersuchungsmaterial zu anonymisieren und vertraglich dafür vorzusorgen, daß nur jene Teile der menschlichen DNA untersucht werden, die nicht Träger der Erbinformation sind, sowie dafür, daß der Dienstleister das Untersuchungsmaterial vernichtet, wenn die Sicherheitsbehörde zur Löschung der personenbezogenen Daten verpflichtet ist.”

Zu den Z 18 und 19 (§ 64 Abs. 2 und 7):

Die Ergänzung der beispielhaften Aufzählung der erkennungsdienstlichen Maßnahmen um die Vornahme von Mundhöhlenabstrichen zum Zwecke der Durchführung einer DNA-Analyse ist auf Grund der zukünftigen Bedeutung dieser Methode für die Wiedererkennung von Menschen angebracht. Die DNA-Analyse ist eine wissenschaftlich anerkannte Methode, bei der aus den mehr als 5 000 bekannten genetischen Merkmalen eines Zellkerns des menschlichen Körpers etwa 25 ausgewählte Merkmale untersucht werden und von jedem ein aus zwei Banden bestehendes Muster (sogenanntes DNA-Profil) erzeugt wird. Das DNA-Profil jedes Menschen ist – außer bei eineiigen Zwillingen – einmalig und mit dem Papillarlinienmuster eines Fingerabdruckes vergleichbar.

Untersuchungsgegenstand sind hiebei ausschließlich die nicht codierten (informationslosen) Bereiche der menschlichen DNA. Diese lassen keine Rückschlüsse auf die Persönlichkeit jener Menschen (zB körperliche Eigenschaften oder denkbare Verhaltensweisen), deren DNA untersucht wird, zu. Mit der Untersuchung sollen nur wissenschaftliche Einrichtungen, die auf dem Gebiet der Humangenetik tätig sind, auf Grund eines Vertrages betraut werden, in dem ausdrücklich vorgesehen wird, daß ausschließlich die nicht codierten Bereiche der menschlichen DNA untersucht werden dürfen. Die in Absatz 7 vorgesehene Verwendungsbeschränkung ergibt sich zwar schon aus dem Gebot, daß Sicherheitsbehörden personenbezogene Daten nur aufgabenbezogen verwenden dürfen (vgl. § 52). Die besondere Sensibilität der auf Grund von Mundhöhlenabstrichen gewonnenen Informationen läßt es jedoch für angebracht erscheinen, diese Verpflichtung in bezug auf diese Daten durch eine eigene Regelung besonders zu betonen. Die Vornahme von Mundhöhlenabstrichen darf mangels Erforderlichkeit nicht mittels Zwangsgewalt gemäß § 78 durchgesetzt werden. Eine DNA-Analyse kann im Einzelfall

auch anhand anderer Spureträger (zB Haaren) vorgenommen werden. Im gegebenen Kontext wird kein gesondertes Auskunftsrecht vorgesehen, da die erfolgte Abnahme eines Mundhöhlenabstriches dem Betroffenen ohnehin bekannt ist.

2.2. Nicht codierte DNA Bereiche:

Wie ersichtlich wird hier sehr klar darauf abgestellt, dass eine Auswertungen von „codierten DNA Bereichen“ verboten ist. DNA Auswertungsmethoden, welche die Frage klären sollen ob eine Person

eine bestimmte Haar- oder Augenfarbe haben, sind aber nach unserem Verständnis nur durch die Nutzung von solchen codierten DNA Abschnitten möglich.

2.2.1. Amelogenin:

Nicht als codierter DNA Bereiche wird von fast allen Staaten das Amelogenin gewertet, welches ja Hinweise auf das Geschlecht erlaubt.

Nur französische Datenschützer sehen auch das anders, wobei auch sie die Analyse und nationale Speicherung erlauben und durchführen. Bei internationalen Onlineabgleichen (Prümverbund) verweigert Frankreich aber die automatisierte Bereitstellung des Amelogeninwertes mit dem Hinweis, dass dies codierende Datenwerte sind. Das ist aber aus rechtlicher Sicht natürlich höchst inkonsequent. Wenn Frankreich tatsächlich diese Sicht ernsthaft vertreten würde, dürften sie diesen Wert auch national nicht auswerten und speichern, da auch in Frankreich der Grundsatz der Vermeidung von Auswertungen codierter Bereiche gilt.

2.2.2 mtDNA und Y-chromosomale DNA Regionen:

In Österreich findet sich in der StPO wie angeführt die Zulässigkeit auch Abstammungsfragen zu klären. Auch wenn hier keine klare Formulierung oder Erläuterungen zu finden sind, in welcher Form diese geschehen kann. Das Bundeskriminalamt vertritt die Rechtsansicht, dass dies in jeder geeigneten Form geschehen darf, soweit sie nicht durch Untersuchungsmethoden im codierten DNA Bereich erfolgen muss.

mtDNA und y- chromosomale Profilwerte eignen sich gerade bei schlechten Spurenqualitäten wie Mischspurenqualitäten auch perfekt für die Absicherung von Identifizierungsmöglichkeiten und berühren nicht das Nutzungsverbot betreffend „codierter“ Bereiche, welche konkrete physische oder psychische Eigenschaften einer Person erkennen lassen würden.

2.2.3. Exkurs Rechtsinterpretation in Deutschland zu möglichen Abstammungsbestimmungen

In Deutschland wurde das aber von einem Höchstgericht auch schon anders beurteilt.

Die DE Rechtslage ist zwar nicht mit der österreichischen Rechtslage vergleichbar. Dieses Judikat ging aber davon aus, dass nach dortiger Interpretation ihrer DNA Gesetzgebung schon bei geringsten „Nebenerkenntnissen“ die nicht exakt ihren Nutzungsbeschränkungen entsprechen, ein Beweisverwertungsverbot vorliegen kann.

Diese Erkenntnis des dt. BGH hat zu großem Unverständnis in der dortigen Öffentlichkeit geführt und eine entsprechende Rechtsänderungsdiskussion ausgelöst. Es ging inhaltlich um die ermöglichte Identifizierung eines Sexualstraftäters nach einem Massenscreeningverfahren über erkannte Verwandtschaftsbeziehung einer in der Zielgruppe des Massenscreenings erfassten angehörigen Person (Onkel).

Es wurden hier 2.400 potentielle Männer freiwillig erfasst. Die durch das ähnliche DNA Muster zufällig erkannte Verwandtschaft einer Person mit dem tatsächlichen Täter führte zu gezielter Folgeermittlung und danach Ausforschung und klarer Straftatuzuordnung. Es handelte sich um den Neffen der Person die sich freiwillig erfassen lies.

Dieser Fall wurde nach der eingelegten Beschwerde des identifizierten Täters vom BGH nur deswegen nicht als Beweisverwertungsverbot gewertet, da sie „zufällig“ entdeckt wurde. Da keine klare Übereinstimmung der Tatortspur mit den 2400 Probanden vorlag hätten diese DNA Profile nach Ansicht des BGH aber eigentlich sofort vernichtet werden müssen und nicht für allfällige Verwandtschaftsbeurteilungen herangezogen werden dürfen.

Durch das Urteil wurde aber in Deutschland klargestellt, dass in Hinkunft ohne vorherige Rechtsanpassung solche „zufälligen“ Erkenntnisse nicht mehr genutzt werden dürfen. Dadurch war der Gesetzgeber gefordert hier klarer formulierte Gesetzesanpassungen vorzunehmen, wenn er eine solche Nutzung wünscht, was in Deutschland auch realisiert wurde.

3.) Kriminalpolizeiliche Anmerkungen

Aus kriminalpolizeilicher Sicht ist anzuführen, dass derartigen phänotypischen Untersuchungsmethoden natürlich auch zu wichtigen zusätzlichen Erkenntnissen vor allem in Hinblick auf mögliche Einschränkungen potentieller Tatverdächtiger beitragen können.

Dessen ungeachtet wird aber dieser mögliche Zusatznutzen nur in absoluten Ausnahmefällen von Relevanz sein. Derartig gewonnene Erkenntnisse können durchaus auch Fehler von Falschinterpretationen und damit falsche Ermittlungsansätze bedeuten.

Dies darf mit einem Echtbeispiel aus der Vergangenheit erläutert werden, welche später in beiden Fällen durch eine zum Zeitpunkt der Tatverübung noch nicht möglichen DNA Analyse geklärt wurden und auch in beiden Fällen zur Verurteilung der Täter geführt haben.

Es handelt sich dabei um die in Österreich sehr bekannten Wiener Mädchenmordfälle in den 90- Jahren (Mordfall Schriefl – 1988, Mordfall Beranek 1989 und Mordfall Strau 1990). Diese Morde wurden von zwei Tätern begangen, wobei der Mordfall Beranek mangels ausreichender Sachbeweise aus verfahrenstaktischen Gründen nicht zur Anklage gebracht wurde, obwohl dieser Mord gesichert auch dem Mörder der Schriefl zuzurechnen war. Im Urteil spielte das keine Rolle. Beide identifizierten Täter wurden zu lebenslanger Haft verurteilt.

In beiden Fällen gab es fehlerhafte forensische serologische Gutachten zur Blutgruppe des Tatverdächtigen. Diese bereitgestellten (falschen Blutgruppeninformationen) führten dazu, dass die kriminalpolizeilichen Ermittlungen unmittelbar nach den Straftaten bei welchen sich auch die später identifizierten Täter als Verdächtige befanden, in diesem frühen Ermittlungsstadium als mögliche Täter wieder ausgeschlossen wurden.

Erst Jahre später konnte durch dann möglichen DNA Beweis auch zweifelsfrei die Identifizierung der Täter gelingen, wobei diese wegen Eigentums bzw. in einem Fall nach Gewaltdelikt mit DNA erfasst wurden (zwangsweise, da sie die Abnahme mit Gewalt verhindern wollten).

Diese Falschaussagen und darauf gegründeten falschen Ermittlungsschritte (Ausschluss von Tatverdächtigen) haben in den 90 Jahren in Österreich zu den umfangreichsten und kostenintensivsten Ermittlungsmaßnahmen der damaligen Kriminalgeschichte geführt und eine ganze Stadt in Furcht und Unruhe versetzt. Der Ermittlungen liefen ins Leere, da die eigentlichen Täter ja schon als Zielpersonen ausgeschlossen waren.

Gleich mögliche Fehler und Falscheinschätzungen wären aber auch durch Bereitstellung solcher – mitunter unzureichend aussagekräftigen Aussagen - zu phänotypischen Eigenschaften eines unbekanntes Tatverdächtigen nicht gänzlich auszuschließen.

Die Aussage, dass eine Person zu 90 % braunes Haar hat, könnte schon zu falschen Ermittlungsschlüssen führen. Abgesehen von diesem Umstand sind gerade solche Eigenschaften auch leicht änderbar (etwa durch färben der Haare oder bei Augen durch farbige Kontaktlinsen). Einem Ermittlungsbeamten der mit diesem Wissen eine Person befragt wird hier nicht erkennbar sein, dass es sich nicht um die Originalfarben handelt, selbst wenn diese forensisch richtig definiert wurden. Ähnlich verhält es sich hier natürlich mit allen möglichen Parametern.

Es kann aber durchaus Fälle geben in welchen solche Methoden die letzte Hoffnung zur Klärung schwerster Straftaten darstellen und den Täterkreis noch weiter einzuschränken. Problematisch ist hier aber aus technischer Sicht, dass zumindest derzeit gerade bei solchen Untersuchungen noch relativ viel biologisches Material benötigt wird, das gerade bei solchen Fällen nicht immer vorhanden ist.

Die Niederlande haben bereits seit vielen Jahren solche gesetzlichen Nutzungsmöglichkeiten. Ob es dort damit schon einmal einen operativen Erfolg gab ist hoch nicht bekannt aber wohl eher unwahrscheinlich. Jedenfalls werden solche Möglichkeiten schon wegen des Aufwandes und der beschränkten Aussagekraft immer nur bei Schwerstdelikten und in Ausnahmefällen denkbar sein und bedürfen dann zweifelsfrei entsprechend klare Rechtsgrundlagen.

Für die Praxisbedeutung von Straftatenklärungen sind jedenfalls Entwicklungen der DNA Analytik mit hoher Sensibilisierung die auch bei sehr geringem Zellmaterial Analysen ermöglichen oder vor allem auch die Entwicklungen in der DNA Datenbanktechnik, welche in den letzten Jahren gemacht wurden z.B. in Österreich automatisierte DNA Mischspurentools und vor allem die internationale Kooperation über den Prümmer Datenverbund von unvergleichlich höherem operativen Wert.

A.2 France

A.2.1 Circular

This is a copy of the Circular (in French) that the Constitutional Council circulated to French Magistrates to inform them that FDP must not be used in criminal cases in France



Paris, le **29 JUIN 2011**

DIRECTION
DES AFFAIRES CRIMINELLES ET DES GRÂCES
SOUS-DIRECTION DE LA JUSTICE PÉNALE GÉNÉRALE
Bureau de la police judiciaire

**Le Garde des Sceaux,
Ministre de la Justice et des Libertés**

à

**Mesdames et Messieurs les procureurs généraux
près les cours d'appel**

OBJET : Propositions de nouvelles méthodes visant à déterminer les caractères physiques ou l'origine ethno-géographique d'une personne à partir des résultats d'analyse d'identification par empreintes génétiques.

N/REF : CRIM-PJ N° 08-28.H5 tome 4

Mon attention a été appelée sur les propositions faites à certains magistrats ou officiers de police judiciaire de recourir, dans le cadre de procédures pénales, à de nouvelles méthodes visant à déterminer les caractères physiques ou l'origine ethno-géographique d'une personne à partir des résultats d'analyse d'identification par empreintes génétiques de traces biologiques issues de personnes inconnues, et recueillies sur une scène d'infraction.

Saisie en application du 2^{ème} alinéa de l'article 1^{er} du décret n°97-109 du 6 février 1997 modifié¹, la commission chargée d'agrée les personnes habilitées à effectuer des missions d'identification par empreintes génétiques dans le cadre de procédures judiciaires a conclu que ces méthodes devaient être considérées avec la plus grande prudence.

Partageant pleinement cette position, je vous saurai gré de veiller à ce qu'il ne soit pas donné de suites favorables à de telles propositions, dont les inconvénients tant juridiques que scientifiques me paraissent dirimants.

¹ « La commission donne un avis sur les questions relatives à la fiabilité et à la sécurité des analyses d'identification par empreintes génétiques, dont elle est saisie par le garde des sceaux, ministre de la justice. »

En effet, l'application du seul principe de liberté de la preuve en matière pénale qui pourrait en l'espèce autoriser magistrats ou officiers de police judiciaire à y recourir, dans le respect des principes de la procédure pénale et dès lors qu'ils peuvent être utiles à la manifestation de la vérité, ne constitue en effet pas un encadrement suffisant de ces méthodes, également soumises aux principes du droit civil régissant la génétique humaine.

Si l'article 16-11 du code civil autorise l'identification d'une personne par ses empreintes génétiques dans le cadre de mesures d'enquête ou d'instruction diligentées lors d'une procédure judiciaire, l'article 16-10 réserve le recours à l'examen des caractéristiques génétiques d'une personne aux seules fins médicales ou de recherches scientifiques.

Or les méthodes proposées relèvent du domaine de l'examen des caractéristiques génétiques et non de celui de l'identification d'une personne.

D'une part, elles ne reposent pas sur une comparaison des résultats des analyses des profils génétiques issus, par exemple, d'un individu et d'une trace biologique qui constitue *in fine* le critère de l'identification d'une personne par ses empreintes génétiques.

D'autre part, même si elles sont mises en œuvre à partir de segments d'acide désoxyribonucléique (ADN) non codants conformément aux exigences de l'avant dernier alinéa de l'article 706-54 du code de procédure pénale, ces méthodes sont indirectement susceptibles de renseigner sur les caractères apparents d'une personne et constituer ainsi un examen de ses caractéristiques génétiques.

Un strict respect du champ d'application des articles 16-10 et 16-11 du code civil paraît d'autant plus essentiel qu'il constitue, pour le Conseil constitutionnel, une garantie fondamentale du recours à la génétique humaine.

Celui-ci a ainsi, dans ses décisions n°2007-557 DC du 15 novembre 2007 (loi relative à la maîtrise de l'immigration, à l'intégration et à l'asile) et n°2010-25 QPC du 16 septembre 2010 (fichier national automatisé des empreintes génétiques), déclaré constitutionnelles les dispositions déférées au motif que « *la disposition contestée n'autorise pas l'examen des caractéristiques génétiques des personnes ayant fait l'objet de ces prélèvements mais permet seulement leur identification par les empreintes génétiques* ».

Je tiens en outre à préciser que le recours à de telles méthodes pourrait entrer dans le champ de l'incrimination prévue à l'article 226-25 du code pénal, s'agissant d'examen des caractéristiques génétiques d'une personne à des fins autres que médicales ou de recherche scientifique.

Par ailleurs, l'utilisation de bases de données scientifiques constituées en propre par un laboratoire ou la consultation à distance, le cas échéant à l'étranger, de bases de données scientifiques partagées est un préalable indispensable au recours à ces nouvelles méthodes.

Les dispositions de la loi n°78-17 du 6 janvier 1978 modifiée relative à l'informatique, aux fichiers et aux libertés imposent en la matière des règles strictes : or les éléments portés à ma connaissance ne m'ont pas permis de vérifier la pertinence des mesures prises - notamment celles visant à l'anonymisation des données - par les laboratoires pour s'y conformer.

Je vous saurais gré de bien vouloir veiller à la diffusion de la présente dépêche et de m'informer, sous le timbre du bureau de la police judiciaire, des éventuelles difficultés susceptibles de résulter de sa mise en œuvre.

La Directrice des affaires criminelles et des grâces


Maryvonne CAILLIBOTTE

A.2.2 Code de procédure pénale. Article 706-54

This section of the Code de procédure pénale describes which DNA markers are permitted to be stored in the French national DNA database.

Créé par Loi n°2003-239 du 18 mars 2003 - art. 29

Modifié par LOI n°2011-267 du 14 mars 2011 - art. 9

Le fichier national automatisé des empreintes génétiques, placé sous le contrôle d'un magistrat, est destiné à centraliser les empreintes génétiques issues des traces biologiques ainsi que les empreintes génétiques des personnes déclarées coupables de l'une des infractions mentionnées à l'article 706-55 en vue de faciliter l'identification et la recherche des auteurs de ces infractions. Sont conservées dans les mêmes conditions les empreintes génétiques des personnes poursuivies pour l'une des infractions mentionnées à l'article 706-55 ayant fait l'objet d'une décision d'irresponsabilité pénale en application des articles 706-120, 706-125, 706-129, 706-133 ou 706-134.

Les empreintes génétiques des personnes à l'encontre desquelles il existe des indices graves ou concordants rendant vraisemblable qu'elles aient commis l'une des infractions mentionnées à l'article 706-55 sont également conservées dans ce fichier sur décision d'un officier de police judiciaire agissant soit d'office, soit à la demande du procureur de la République ou du juge d'instruction ; il est fait mention de cette décision au dossier de la procédure. Ces empreintes sont effacées sur instruction du procureur de la République agissant soit d'office, soit à la demande de l'intéressé, lorsque leur conservation n'apparaît

plus nécessaire compte tenu de la finalité du fichier. Lorsqu'il est saisi par l'intéressé, le procureur de la République informe celui-ci de la suite qui a été réservée à sa demande ; s'il n'a pas ordonné l'effacement, cette personne peut saisir à cette fin le juge des libertés et de la détention, dont la décision peut être contestée devant le président de la chambre de l'instruction. Les officiers de police judiciaire peuvent également, d'office ou à la demande du procureur de la République ou du juge d'instruction, faire procéder à un rapprochement de l'empreinte de toute personne à l'encontre de laquelle il existe une ou plusieurs raisons plausibles de soupçonner qu'elle a commis l'une des infractions mentionnées à l'article 706-55 avec les données incluses au fichier, sans toutefois que cette empreinte puisse y être conservée. Le fichier prévu par le présent article contient également les empreintes génétiques recueillies à l'occasion :

1° Des procédures de recherche des causes de la mort ou de recherche des causes d'une disparition prévues par les articles 74, 74-1 et 80-4 ;

2° Des recherches aux fins d'identification, prévues par l'article 16-11 du code civil, de personnes décédées dont l'identité n'a pu être établie, à l'exception des militaires décédés à l'occasion d'une opération conduite par les forces armées ou les formations rattachées. Toutefois, les empreintes génétiques recueillies dans ce cadre font l'objet d'un enregistrement distinct de celui des autres empreintes génétiques conservées dans le fichier. Elles sont effacées sur instruction du procureur de la République, agissant soit d'office, soit à la demande des intéressés, lorsqu'il est mis fin aux recherches d'identification qui ont justifié leur recueil. Les empreintes génétiques des ascendants, descendants et collatéraux des personnes dont l'identification est recherchée ne peuvent être conservées dans le fichier que sous réserve du consentement éclairé, exprès et écrit des intéressés.

Les empreintes génétiques conservées dans ce fichier ne peuvent être réalisées qu'à partir de segments d'acide désoxyribonucléique non codants, à l'exception du segment correspondant au marqueur du sexe.

Un décret en Conseil d'Etat pris après avis de la Commission nationale de l'informatique et des libertés détermine les modalités d'application du présent article. Ce décret précise notamment la durée de conservation des informations enregistrées.

A.2.3 Article A38

Article A38 is a specific list of DNA markers which are permitted to be stored in the French national DNA database.

Article A38

► Modifié par ARRÊTÉ du 10 août 2015 - art. 2 (V)

Les analyses destinées à l'identification génétique peuvent ne porter que sur les seuls segments d'ADN figurant dans le tableau ci-après :

SEGMENT D'ADN OU "LOCUS" selon la nomenclature internationale	LOCALISATION
D3S1358	Chromosome 3
VWA	Chromosome 12
D8S1179	Chromosome 8
D21S11	Chromosome 21
D18S51	Chromosome 18
TH01	Chromosome 11
FGA	Chromosome 4
D16S539	Chromosome 16
D5S818	Chromosome 5
D13S317	Chromosome 13
D7S820	Chromosome 7
CSF1PO	Chromosome 5
TPOX	Chromosome 2
Amélogénine	Chromosomes X et Y

Elles portent alors également sur deux au moins des quatre segments d'ADN suivants :

SEGMENT D'ADN OU "LOCUS" selon la nomenclature internationale	LOCALISATION
D2S1338	Chromosome 2
D19S433	Chromosome 19
Penta E	Chromosome 15
Penta D	Chromosome 21

Elles peuvent également porter sur le segment suivant :

SEGMENT D'ADN OU "LOCUS" selon la nomenclature internationale	LOCALISATION
SE33 (ACTBP2)	Chromosome 6

A.3 Poland

A.3.1 Legal Opinion for the Institute of Biology 'CLKP' (Central Forensic Laboratory of the Police) (translated)

Below is the translated legal opinion given to the Institute of Biology (CLKP) in Poland about the wording of the Polish Police Act with regards to the regulation of FDP.

Question:

Does the Polish legislation contain any legal or ethical limitations to obtain any kind of information about an unnamed offender, including information about the visible characteristic of the person based on DNA examination, on the basis of biological trace evidence left by him/her, that was disclosed and recorded in the criminal proceedings (inspection and investigation), for example in the procedural step of the inspection of crime scene, object or a person (Article 207 of the Criminal Procedure Code of the Republic of Poland)?

Analysis of and conclusions:

The presented opinion refers solely to the legal aspects of the above question. Given the considerable complexity of ethical considerations, they will not be considered in the present opinion.

Trace evidence left at the crime scene can carry a lot of information about the person who left it. According to Article 297§1 of the Criminal Procedure Code of the Republic of Poland, the objectives of preparatory proceedings are as follows:

- 1) Establishment whether a prohibited act has been committed and whether it constitutes a crime;
- 2) Identification and, if needed, apprehension of the offender;
- 3) Collection of data about the offender according to Article 213 and 214 of the Code;
- 4) Clarification of the circumstances of the case, including identification of the aggrieved parties and the scope of damage;
- 5) Collection, securing and recording, to the necessary extent, the evidence for the court.

Accordingly, the Criminal Procedure Code does not contain any limitations to probative use of biological trace evidence. Therefore, when a judicial body is deciding on admitting evidence from an expert witness, it can specify the scope of the motion for evidence, by asking concrete question concerning also the coding part of the genome. The motion for evidence can therefore include an order to determine the observable characteristics contained in the recorded biological trace evidence located in the coding part of the genome.

However, Article 20 of the Police Act 1990 considers to the possibility of obtaining, gathering, examining as well as processing information by the Police. According to this

Article, the Police, subject to limitations contained in Article 19, has the ability to obtain information, including classified information, gather it, examine it and process it. The Police can obtain, gain, gather, process and use, also without person's consent or knowledge, information, including personal data, with the aim to perform acts as specified by the Act, about the following persons:

- 1) Persons suspected of having committed a crime pursued by public prosecution;
- 2) Minors suspected of having committed acts forbidden by legislation pursued by public prosecution;
- 3) Persons of untraceable identity or who are seeking to hide their identity;
- 4) Persons capable of creating a danger, as defined by the Act Regarding Persons of Psychiatric Diseases, who create a danger to the life, health or sexual liberty of other people;
- 5) Persons wanted;
- 6) Persons missing;
- 7) Persons who fall under protection guaranteed by the Act Regarding Protection and Help for Aggrieved Persons and Witnesses (Journal of Laws 2015, Act No 21).

Information described in the above paragraph may include:

- 1) Personal data subject to Article 27 of the Data Protection Act 1997 **where data regarding the genetic code includes information exclusively about the non-coding part of DNA;**
- 2) Finger prints;
- 3) Photographs, drawings and descriptions of one's visible characteristics;
- 4) Characteristics and identifying marks, pseudonyms;
- 5) Information about:
 - a) One's domicile or place of current stay;
 - b) One's education, employment details, current property and assets;
 - c) One's documents and property used by the offender;
 - d) Details of offender's activity, his networks and contacts;
 - e) Details of offender's acts against the aggrieved parties.

Accordingly, the provisions of the Police Act specify the rules regarding the gathering and processing of personal data by the Police, discussed by Article 27 of the Data Protection Act 1997. Such personal data include the ethnic background, political, religious, philosophical views and alignments, as well as information about health, **genetic code**, habits, sexual life and data concerning previous convictions, sentencing decrees and mandatory fines, as well as other decrees issues in judicial or administrative proceedings. Consequently, information concerning the genetic code that can be gathered and processed by the Police includes exclusively information **about the non-coding part of DNA**. This means that data concerning the coding part of DNA cannot be gathered or processed by the Police. However, such information can be the subject of a motion for evidence in the decision to admit an expert witness.

A.3.2 Regulation No. 26 by the Commander in Chief of the Police from 10 July 2017

This Polish regulation (in Polish), written by the Commander in Chief of the Police, talks about the processing/analysis of forensic DNA information in the context of storage of STR profiles in the national DNA database.

ZARZĄDZENIE NR 26

KOMENDANTA GŁÓWNEGO POLICJI

z dnia 10 lipca 2017 r.

w sprawie wykonywania przez Policję zadań związanych z przetwarzaniem informacji o wynikach analizy kwasu deoksyrybonukleinowego (DNA) oraz prowadzeniem bazy danych DNA

Na podstawie art. 7 ust. 1 pkt 2 z dnia 6 kwietnia 1990 r. o Policji (Dz. U. z 2016 r. poz. 1718, z późn. zm.1)) zarządza się, co następuje:

Rozdział 1

Przepisy ogólne

§ 1. Zarządzenie określa:

- 1) metody i formy wykonywania zadań związanych z przetwarzaniem informacji o wynikach analizy kwasu deoksyrybonukleinowego (DNA) dotyczących osób, o których mowa w art. 21a ust. 2 pkt 1 ustawy z dnia 6 kwietnia 1990 r. o Policji oraz przetwarzaniem danych i gromadzeniem próbek biologicznych, o których mowa w art. 21a ust. 2 pkt 2 i ust. 3 tej ustawy;
- 2) metody i formy wykonywania zadań związanych z prowadzeniem zbioru danych DNA, o którym mowa w art. 21a ust. 1 ustawy z dnia 6 kwietnia 1990 r. o Policji;
- 3) wykonywanie zadań administratora danych zbioru danych, o którym mowa w pkt 2, w tym nadawanie upoważnień dotyczących przetwarzania informacji.

§ 2. Użyte w zarządzeniu określenia i skróty oznaczają:

- 1) baza danych DNA – zbiór danych DNA w rozumieniu art. 21a ust. 1 ustawy z dnia 6 kwietnia 1990 r. o Policji zawierający informacje o wynikach kwasu deoksyrybonukleinowego (DNA);
- 2) baza danych DNA Interpolu – bazę danych DNA zarządzaną przez Sekretariat Generalny Interpolu, w której przetwarzane są profile DNA udostępnione przez państwa członkowskie Interpolu;
- 3) CLKP – Centralne Laboratorium Kryminalistyczne Policji;
- 4) Interpol – Międzynarodową Organizację Policji Kryminalnej – Interpol;
- 5) k.p.k. – ustawę z dnia 6 czerwca 1997 r. Kodeks postępowania karnego (Dz. U. z 2016 r. poz. 1749, 1948, 2138 i 2261 oraz z 2017 r. poz. 244, 768 i 966);

- 6) KSIP – Krajowy System Informacyjny Policji;
- 7) kwalifikacja profilu DNA – ocenę, czy profil DNA lub profil DNA dominujący z mieszaniny zawiera co najmniej osiem pełnych układów autosomalnych oraz amelogeninę, przeprowadzaną przez biegłego CLKP lub Ik kwp/KSP wykonującego badania i wydającego opinię w celu zapisu profilu DNA w systemie CODIS i rejestracji w bazie danych DNA;
- 8) Ik kwp/KSP – laboratoria kryminalistyczne komend wojewódzkich Policji lub Laboratorium Kryminalistyczne Komendy Stołecznej Policji;
- 9) laboratoria pozapolicyjne – inne niż policyjne ośrodki, instytucje lub podmioty naukowe wykonujące badania i wydające opinie z zakresu genetyki sądowej na potrzeby prowadzonych postępowań;
- 10) NN osoby – osoby o nieustalonej tożsamości lub osoby usiłujące ukryć swoją tożsamość;
- 11) NN ślady – ślady nieznanymi sprawców przestępstw;
- 12) NN zwłoki – zwłoki ludzkie o nieustalonej tożsamości;
- 13) system CODIS – wchodzący w skład bazy danych DNA system informatyczny służący do przetwarzania profili DNA;
- 14) osoby stwarzające zagrożenie – osoby, o których mowa w ustawie z dnia 22 listopada 2013 r. o postępowaniu wobec osób z zaburzeniami psychicznymi stwarzających zagrożenie życia, zdrowia lub wolności seksualnej innych osób (Dz. U. z 2014 r. poz. 24 oraz z 2015 r. poz. 396);
- 15) osoby zaginione – osoby, o których mowa w art. 14 ust. 1 pkt 3 ustawy;
- 16) pakiet – pakiet kryminalistyczny do pobierania wymazów ze śluzówki policzków od osób lub materiału biologicznego ze zwłok ludzkich o nieustalonej tożsamości, oznakowany indywidualnym kodem kreskowym;
- 17) profil DNA – informację o wynikach analizy kwasu deoksyrybonukleinowego (DNA) w postaci wariantów identyfikacyjnych osoby oznaczonych w różnych miejscach obszaru niekodującego DNA, umożliwiających uzyskanie indywidualnego zapisu numerycznego;
- 18) próbka biologiczna – próbkę pobraną od osoby albo ze zwłok ludzkich w celu przeprowadzenia analizy kwasu deoksyrybonukleinowego (DNA), o której mowa w art. 21a ust. 3 ustawy;
- 19) ustawa – ustawę z dnia 6 kwietnia 1990 r. o Policji;
- 20) wynik badań DNA – profil DNA zapisany w karcie rejestracyjnej profilu DNA, kopii opinii biegłego, sprawozdaniu, notatce urzędowej, systemie CODIS, wydruku aparaturowym (elektroforegramie);
- 21) zarządzenie – zarządzenie o wprowadzeniu do bazy danych DNA informacji o wynikach analizy kwasu deoksyrybonukleinowego (DNA), o którym mowa w art. 21b ustawy.

§ 3. 1. W CLKP prowadzi się bazę danych DNA, w której gromadzone są i przetwarzane:

1) informacje i dane, o których mowa w art. 21a ust. 1 i 2 ustawy, w tym przechowywane w formie:

a) zarządzenia,

b) karty rejestracyjnej próbki biologicznej sporządzonej według wzoru określonego w załączniku nr 1,

c) dokumentów, na których został utrwalony profil DNA;

2) próbki biologiczne;

3) materiały zawierające DNA osoby zaginionej zabezpieczone na zasadach i w sposób określony

w odrębnych przepisach, w szczególności przedmioty osobistego użytku, z których można oznaczyć profil DNA osoby zaginionej;

4) informacje i dane określone w art. 10 ustawy z dnia 10 czerwca 2016 r. o działaniach antyterrorystycznych

(Dz. U. poz. 904 i 1948) dotyczące osób, od których pobrano materiał biologiczny w celu oznaczenia profilu DNA;

5) informacje o pozytywnych wynikach porównania profili DNA lub inne informacje związane

z przetwarzaniem profili DNA, w tym korespondencja prowadzona z uprawnionymi organami.

2. CLKP wykonuje zadania krajowego punktu kontaktowego do spraw wymiany danych o profilach DNA, o którym mowa w art. 145j ust. 1 pkt 1 ustawy.

Rozdział 2

Czynności związane z gromadzeniem informacji o profilach DNA

§ 4. 1. W celu rejestracji w bazie danych DNA profilu DNA osób stwarzających zagrożenie, osób

wymienionych w art. 74 k.p.k., art. 15 ust. 1 pkt 3a lit. c ustawy, nieletnich, NN osób oraz NN zwłok pobiera się próbki biologiczne na jeden pakiet, niezależnie od próbek biologicznych pobranych do innych celów.

2. Można odstąpić od pobrania próbki biologicznej od osoby wymienionej w art. 74 k.p.k. lub nieletniego, jeżeli informacja o fakcie pobrania próbki biologicznej od tej osoby, w celu rejestracji w bazie danych DNA, została wcześniej zarejestrowana w KSIP w związku z innym postępowaniem, a tożsamość tej osoby nie budzi wątpliwości.

3. W przypadku czynności poszukiwawczych za osobą zaginioną, próbki biologiczne pobiera się w miarę możliwości od co najmniej dwóch osób, o których mowa w art. 15 ust. 1 pkt 3a lit. c ustawy.

4. Do każdego pakietu sporządza się kartę rejestracyjną próbki biologicznej.

5. Fakt pobrania próbki biologicznej do bazy danych DNA rejestruje się w KSIP.

§ 5. 1. W celu rejestracji w bazie danych DNA profilu DNA osoby wymienionej w art. 74 k.p.k., policjant

prowadzący postępowanie przygotowawcze wykonuje następujące czynności:

- 1) sporządza dwa egzemplarze zarządzenia, którego wzór określa załącznik nr 2;
- 2) przekazuje do CLKP kartę rejestracyjną próbki biologicznej oraz pakiet;
- 3) przekazuje do CLKP jeden egzemplarz zarządzenia, a drugi egzemplarz włącza do akt postępowania.

2. Zarządzenie, o którym mowa w ust. 1 pkt 1, podpisuje właściwy miejscowo organ Policji lub

upoważniony przez niego policjant.

3. W przypadku, o którym mowa w § 4 ust. 2, wykonuje się czynności określone w ust. 1 pkt 1 i 3 oraz ust. 2.

§ 6. 1. W celu rejestracji w bazie danych DNA profilu DNA osoby wymienionej w art. 74 k.p.k.

uzyskanego na podstawie opinii biegłego z laboratorium posiadającego akredytację zgodnie z normą ISO17025, policjant prowadzący postępowanie przygotowawcze:

- 1) wykonuje czynności określone w § 5 ust. 1 pkt 1 i 3 oraz ust. 2;
- 2) przekazuje do CLKP wynik badań DNA.

2. Czynności, o których mowa w ust. 1, można wykonać jednocześnie z przekazaniem do CLKP lub do odpowiedniego lk kwp/KSP postanowienia o dopuszczeniu dowodu z opinii biegłego oraz pobranej próbki biologicznej do badań genetycznych. W przypadku uzyskania negatywnego wyniku badań genetycznych lub niezakwalifikowania profilu DNA do rejestracji w bazie danych DNA zarządzenie podlega zwrotowi.

§ 7. W celu rejestracji profilu DNA na zarządzenie sądu w przypadkach, o których mowa w art. 21b

pkt 1 ustawy albo zarządzenie prokuratora w związku z postępowaniem przygotowawczym, policjant przekazuje do CLKP zarządzenie sądu lub prokuratora z pakietem i kartą rejestracyjną próbki biologicznej, celem uzyskania profilu DNA lub z profilem DNA uzyskanym w ramach opinii biegłego.

§ 8. 1. W przypadku uzyskania profilu DNA osoby z opinii biegłego w toku czynności określonych

w art. 192a k.p.k., a analiza informacji uzyskanych w tej sprawie wskazuje na zasadność rejestracji w bazie danych DNA profilu DNA osoby, policjant prowadzący postępowanie przygotowawcze wykonuje czynności określone w § 5 ust. 1 pkt 1 i 3 oraz ust. 2.

2. Po ustaniu przesłanek do przetwarzania informacji o profilu DNA osób wymienionych w art. 192a k.p.k., policjant, o którym mowa w ust. 1, niezwłocznie zwraca się do CLKP o usunięcie danych dotyczących tych osób.

§ 9. 1. W celu rejestracji w bazie danych DNA profilu DNA NN śladu uzyskanego na podstawie opinii

z dowodu biegłego, policjant wykonuje czynności określone w § 5 ust. 1 pkt 1, 3 i ust. 2 oraz przekazuje do CLKP wynik badań DNA.

2. Można przekazać do CLKP lub Ik kwp/KSP zarządzenie jednocześnie wraz z postanowieniem o dopuszczeniu dowodu z opinii biegłego i NN śladami zabezpieczonymi do badań. W przypadku uzyskania negatywnego wyniku badań genetycznych lub niezakwalifikowania profilu DNA do rejestracji w bazie danych DNA zarządzenie podlega zwrotowi.

§ 10. 1. W celu rejestracji w bazie danych DNA profilu DNA NN zwłok lub NN osoby policjant prowadzący postępowanie lub czynności identyfikacyjne wykonuje następujące czynności:

- 1) sporządza dwa egzemplarze zarządzenia oraz przedstawia je do podpisu właściwego miejscowo organu Policji lub osobie przez niego upoważnionej;
- 2) przekazuje do CLKP próbkę biologiczną;
- 3) przekazuje do CLKP kartę rejestracyjną próbki biologicznej, o ile próbka została zabezpieczona na pakiet;
- 4) przekazuje do CLKP jeden egzemplarz zarządzenia, a drugi egzemplarz włącza do akt postępowania lub czynności identyfikacyjnych.

2. W celu rejestracji w bazie danych DNA profilu DNA NN zwłok lub NN osoby uzyskanego na podstawie opinii z dowodu biegłego, policjant:

- 1) wykonuje odpowiednio czynności określone w ust. 1 pkt 1 i 4;
- 2) przekazuje do CLKP wynik badań DNA.

3. Można przekazać do CLKP lub Ik kwp/KSP zarządzenie jednocześnie wraz z postanowieniem o dopuszczeniu dowodu z opinii biegłego i z zabezpieczonymi do badań próbkami biologicznymi NN zwłok lub NN osoby. W przypadku uzyskania negatywnego wyniku badań genetycznych lub niezakwalifikowania profilu DNA do rejestracji w bazie danych DNA zarządzenie podlega zwrotowi.

§ 11. 1. W celu rejestracji w bazie danych DNA profilu DNA osoby zaginionej, policjant prowadzący

czynności poszukiwawcze za osobą zaginioną wykonuje odpowiednio czynności:

- 1) sporządza dwa egzemplarze zarządzenia oraz przedstawia je do podpisu właściwego miejscowo organu Policji lub osobie przez niego upoważnionej;
- 2) przekazuje do CLKP materiały, o których mowa w § 3 ust. 1 pkt 3;
- 3) przekazuje do CLKP jeden egzemplarz zarządzenia, drugi egzemplarz włącza do teczek poszukiwań.

2. W celu rejestracji w bazie danych DNA profilu DNA osoby zaginionej uzyskanego na podstawie opinii

z dowodu biegłego, policjant:

- 1) wykonuje czynności określone w ust. 1 pkt 1 i 3;
- 2) przekazuje do CLKP wynik badań DNA;
- 3) przekazuje do CLKP materiały, o których mowa w § 3 ust. 1 pkt 3, o ile dysponuje takim materiałem.

§ 12. 1. W celu rejestracji w bazie danych DNA profilu DNA osoby wymienionej w art. 15 ust. 1 pkt 3a lit. c ustawy, policjant prowadzący czynności poszukiwawcze za osobą zaginioną wykonuje następujące czynności:

- 1) sporządza dwa egzemplarze zarządzenia oraz przedstawia je do podpisu właściwego miejscowo organu Policji lub osobie przez niego upoważnionej;
- 2) przekazuje do CLKP kartę rejestracyjną próbki biologicznej oraz pakiet;
- 3) przekazuje do CLKP jeden egzemplarz zarządzenia, a drugi egzemplarz włącza do teczki poszukiwań.

2. W celu rejestracji w bazie danych DNA profilu DNA osoby wymienionej w art. 15 ust. 1 pkt 3a lit. c

ustawy, uzyskanego na podstawie opinii z dowodu biegłego, policjant:

- 1) sporządza dwa egzemplarze zarządzenia oraz przedstawia je do podpisu właściwego miejscowo organu Policji lub osobie przez niego upoważnionej;
- 2) przekazuje do CLKP jeden egzemplarz zarządzenia, a drugi włącza do akt sprawy;
- 3) przekazuje do CLKP próbkę biologiczną o ile nią dysponuje;
- 4) przekazuje do CLKP wynik badań DNA.

§ 13. 1. Profile DNA zarejestrowane w bazie danych DNA, są automatycznie przeszukiwane

i porównywane w celach identyfikacyjnych i wykrywczych przez cały okres przechowywania w bazie danych DNA.

2. Profile DNA niezarejestrowane w bazie danych DNA, są sprawdzane każdorazowo na pisemne zlecenie uprawnionego organu.

3. Dopuszcza się wielokrotne sprawdzenie w bazie danych DNA profilu DNA, w tym profilu, który nie został zakwalifikowany do rejestracji.

Rozdział 3

Wymiana międzynarodowa informacji o profilach DNA

§ 14. 1. Profile DNA zarejestrowane w bazie danych DNA, są udostępniane i przeszukiwane w ramach zautomatyzowanej wymiany profili DNA pomiędzy państwami członkowskimi Unii Europejskiej, realizowanej na podstawie art. 145j ust. 2 ustawy, z wyjątkiem:

- 1) profili DNA osób wymienionych w art. 15 ust. 1 pkt 3a lit. c ustawy;
- 2) profili DNA, co do których organ zlecający rejestrację zastrzegł pisemnie, że nie podlegają wymianie międzynarodowej.

2. Zlecenie, o którym mowa w art. 145j ust. 2 pkt 2 ustawy, stanowi zarządzenie.

§ 15. 1. Profile DNA mogą być sprawdzane w bazach danych DNA wybranych państw członkowskich

Interpolu lub rejestrowane i sprawdzane w bazie danych DNA Interpolu.

2. W celu dokonania sprawdzenia lub rejestracji, o których mowa w ust. 1, policjant:

- 1) zwraca się do CLKP lub Ik kwp/KSP o wypełnienie formularza „Interpol DNA profile search request” w zakresie profilu DNA;

2) przekazuje uzupełniony formularz „Interpol DNA profile search request” za pośrednictwem oficera kontaktowego do spraw międzynarodowej wymiany informacji kryminalnych komendy wojewódzkiej Policji lub Komendy Stołecznej Policji do komórki organizacyjnej w Komendzie Głównej Policji właściwej do spraw współpracy międzynarodowej. Rozdział 4 Zadania CLKP oraz Ik kwp/KSP związane z przetwarzaniem informacji o profilach DNA w bazie danych DNA

§ 16. 1. Do zadań CLKP należy:

- 1) dokonywanie weryfikacji formalno-merytorycznej obejmującej sprawdzanie nadesłanej dokumentacji dotyczącej rejestracji profili DNA;
 - 2) zwracanie dokumentacji bez rejestracji profilu DNA w bazie danych DNA, organowi zlecającemu rejestrację w przypadku, gdy:
 - a) pakiet jest uszkodzony, niekompletny lub nieprawidłowo zabezpieczony,
 - b) stwierdzono nieprawidłowe wypełnienie bądź niekompletność dokumentacji,
 - c) stwierdzono niezgodność danych na karcie rejestracyjnej próbki biologicznej z danymi podanymi na zarządzeniu,
 - d) nie uzyskano profilu DNA,
 - e) profil DNA nie został zakwalifikowany do rejestracji;
 - 3) dokonywanie rejestracji profilu DNA w bazie danych DNA na podstawie zarządzenia właściwego organu;
 - 4) kwalifikowanie profilu DNA w celu rejestracji w bazie danych DNA;
 - 5) dokonywanie rejestracji do KSIP informacji dotyczących profilu DNA zarejestrowanego w bazie danych DNA;
 - 6) przeprowadzanie badań genetycznych w celu uzyskania profili DNA;
 - 7) wykonywanie przeszukań profili DNA w bazie danych DNA;
 - 8) wykonywanie zadań krajowego punktu kontaktowego, o których mowa w art. 145j ust. 1 pkt 1 ustawy;
 - 9) udostępnianie zgromadzonych informacji i danych uprawnionym organom;
 - 10) weryfikowanie uzyskanych wyników przeszukań bazy danych DNA;
 - 11) przekazywanie informacji o zweryfikowanych pozytywnych wynikach przeszukania jednostkom i komórkom organizacyjnym Policji, którym te informacje mogą być przydatne dla celów wykrywczych, dowodowych lub identyfikacyjnych;
 - 12) informowanie zlecającego sprawdzenie o wynikach przeszukania profili DNA w przypadkach, o których mowa w § 13 ust. 2;
 - 13) dokonywanie weryfikacji, o której mowa w art. 21a ust. 4 i art. 21d ust. 4 ustawy na podstawie informacji przekazanych przez uprawnione podmioty.
2. CLKP może zwracać się do jednostek lub komórek organizacyjnych Policji o dokonanie weryfikacji, o której mowa w art. 21a ust. 4 i art. 21d ust. 4 ustawy, w tym również w zakresie wystąpienia przesłanek, o których mowa w art. 21e ust. 1 ustawy oraz przekazanie wyników tej weryfikacji.

§ 17. 1. Do zadań Ik kwp/KSP należy:

- 1) kwalifikowanie profilu DNA w celu rejestracji w bazie danych DNA;
- 2) przekazywanie do CLKP wyników badań DNA w formie karty rejestracyjnej profilu DNA sporządzonej według wzoru określonego w załączniku nr 3 lub w postaci zapisu w systemie CODIS;
- 3) przekazywanie do CLKP zarządzenia;
- 4) przeprowadzanie sprawdzeń profili DNA w systemie CODIS w ramach wykonywanych opinii genetycznych, sprawozdań, notatek urzędowych.

§ 18. 1. Dyrektora CLKP upoważnia się do:

- 1) wykonywania zadań administratora danych i informacji zgromadzonych w bazie danych DNA, w tym zadań administratora danych wynikających z ustawy z dnia 29 sierpnia 1997 r. o ochronie danych osobowych (Dz. U. z 2016 r. poz. 922);
- 2) przetwarzania danych i informacji, o których mowa w art. 21a ust. 1 i 2 ustawy, gromadzonych w bazie danych DNA w zakresie niezbędnym do wykonania zadań określonych w niniejszym zarządzeniu;
- 3) nadawania i cofania policjantom lub pracownikom CLKP lub Ik kwp/KSP upoważnień do przetwarzania danych osobowych w bazie danych DNA;
- 4) kontroli dostępu do danych i informacji przetwarzanych w bazie danych DNA;
- 5) udostępniania danych i informacji podmiotom określonym w ustawie, jednostkom organizacyjnym Policji oraz innym podmiotom uprawnionym do uzyskiwania danych i informacji przetwarzanych w bazie danych DNA na podstawie przepisów odrębnych;
- 6) nadzoru nad realizacją zadań krajowego punktu kontaktowego, o których mowa w art. 145j ust. 1 pkt 1 ustawy;
- 7) współpracy z komórkami organizacyjnymi KGP w sprawie szczegółowego sposobu wykonywania czynności służbowych związanych z przetwarzaniem informacji w bazie danych DNA;
- 8) oceny danych i informacji przetwarzanych w bazie danych DNA, o której mowa w art. 21a ust. 4 i art. 21d ust. 4 ustawy lub pod kątem wystąpienia innych wynikających z przepisów prawa powszechnie obowiązującego okoliczności skutkujących koniecznością weryfikacji oraz usunięcia danych i informacji z bazy danych DNA na podstawie informacji przekazanych przez uprawnione podmioty;
- 9) wyznaczania oraz upoważniania policjantów lub pracowników CLKP do realizacji zadań, o których mowa w pkt 4-6 i pkt 8 lub innych związanych z realizacją zadań krajowego punktu kontaktowego, o którym mowa w art. 145j ust. 1 pkt 1 ustawy.

Rozdział 5

Przepisy końcowe

§ 19. Traci moc zarządzenie nr 1565 Komendanta Głównego Policji z dnia 29 grudnia 2005 r. w sprawie wykonywania przez policjantów zadań związanych z prowadzeniem bazy

danych zawierającej informacje o wynikach analizy kwasu dezoksyrybonukleinowego (Dz. Urz. KGP z 2006 r. poz. 2).

§ 20. Zarządzenie wchodzi w życie po upływie 7 dni od dnia ogłoszenia.

A.3.3 Regulation relating to forensic DNA storage in a national database

Poland's regulation on forensic DNA storage in a national database – translated.

Article 21a[1]:

1. The Police Commander in Chief shall keep a database containing information on the results of deoxyribonucleic acid (DNA) analysis, hereinafter referred to as “the DNA database” and he/she shall be its administrator within the meaning of the Act of 29 August 1997 on the protection of personal data.

2. The following items shall be stored and processed in the DNA database:

(1) information referred to in Paragraph 1 in respect of the following:

- (a) persons enlisted in Article 74 and 192a of the Code of Criminal Proceedings,
- (b) persons of unknown identity and persons who try to conceal their identity,
- (c) human corpses of unknown identity,
- (d) tracks of unidentified offenders...[...].

3. Alongside the DNA database, samples shall be collected from a person or human corpse in order to carry out deoxyribonucleic acid (DNA) analysis in the form of cheek, blood, hair root or discharge smears, and in the case of human corpses – biological material in the form of tissue samples, hereinafter referred to as biological samples...[...].

Article 21d. Biological samples and information concerning the results of deoxyribonucleic acid (DNA) analysis shall be stored in the DNA database for 20 years and shall be used to combat crimes and identify persons and corpses.

2. Biological samples and information concerning the results of deoxyribonucleic acid (DNA) analysis of persons suspected, accused or condemned in respect of murder or offences provided for in Chapters XVI-XX, XXV and XXXV of the Penal Code, as well as persons referred to in Article 94 (1) of the Penal Code may be stored in the DNA database for 35 years.

A.3.4 Regulation relating to unidentified human remains

The (translated) section of the Polish Police Act which outlines regulation on when processing and analysis is permitted on unidentified human remains

In Chapter 3, Article 14/15 it notes that:

Police officers performing activities, referred to in Article 14 (including using personal data), shall have the right to:

(3a) collect swabs from cheek mucous membrane of persons:

(a) under the procedure and in cases determined in the provisions of the Code of Criminal Procedure,

(b) for the purpose of identification of persons of undetermined identity and persons attempting to conceal their identity, if identity determination is impossible otherwise,

(3b) collect biological material from human body of undetermined identity

Similarly in Article 20 it states:

The Police may collect, process and use for detection and information purposes information, including personal data of persons suspected of crimes prosecuted on indictment, of juvenile offenders who have committed crimes prohibited under the Act as crimes prosecuted on indictment, of persons of unknown identity or persons who try to conceal their identity, persons wanted, with or without their awareness and consent

A.4 Spain

A.4.1 Law 15/1999 on Protection of Personal Data: Article 22

An extract (in Spanish) from the Spanish Law 15/1999 on Protection of Personal Data; article 22. This extract discusses data protection in the police force, but says nothing specific about FDP.

Artículo 22. Ficheros de las Fuerzas y Cuerpos de Seguridad.

1. Los ficheros creados por las Fuerzas y Cuerpos de Seguridad que contengan datos de carácter personal que, por haberse recogido para fines administrativos, deban ser objeto de registro permanente, estarán sujetos al régimen general de la presente Ley.
2. La recogida y tratamiento para fines policiales de datos de carácter personal por las Fuerzas y Cuerpos de Seguridad sin consentimiento de las personas afectadas están limitados a aquellos supuestos y categorías de datos que resulten necesarios para la prevención de un peligro real para la seguridad pública o para la represión de infracciones penales, debiendo ser almacenados en ficheros específicos establecidos al efecto, que deberán clasificarse por categorías en función de su grado de fiabilidad.
3. La recogida y tratamiento por las Fuerzas y Cuerpos de Seguridad de los datos, a que hacen referencia los apartados 2 y 3 del artículo 7, podrán realizarse exclusivamente en los supuestos en que sea absolutamente necesario para los fines de una investigación concreta, sin perjuicio del control de legalidad de la actuación administrativa o de la obligación de resolver las pretensiones formuladas en su caso por los interesados que corresponden a los órganos jurisdiccionales.
4. Los datos personales registrados con fines policiales se cancelarán cuando no sean necesarios para las averiguaciones que motivaron su almacenamiento. A estos efectos, se considerará especialmente la edad del afectado y el carácter de los datos almacenados, la necesidad de mantener los datos hasta la conclusión de una investigación o procedimiento concreto, la resolución judicial firme, en especial la absolutoria, el indulto, la rehabilitación y la prescripción de responsabilidad.

Index

Adversarial system 32, 49, 70
Amelogenin (sex) marker 34, 40, 59
Austria – 3, 22-28, 75
Baldness prediction 33
Bavaria 41
Biometrics Commissioner (UK) 69-71
Bundesrat 41
Burglary 33
Civil law 22, 29, 37, 44, 49, 55
Central Forensic Laboratory of the Police (CFLP) (Poland) 46-47
Charter of Fundamental Rights of the European Union 15
Code Civil 29, 30, 32
Code of Criminal Procedure 23, 33, 37, 39, 40, 44, 45, 61, 62
Code de la Recherche 29
Code de Procédure Pénale 29, 34, 35
Code de Santé Publique 29, 30
National Consultative Commission on Human Rights (France) 35
Consent 15, 19, 30, 31, 45, 49
Court 3, 12, 15, 24, 27, 29, 31-36, 38, 41, 43, 45, 46, 49, 69, 70, 73, 75
Criminal Code 29, 32, 33, 49
Criminal Procedures and Investigation Act (UK) 69
Data protection 15-17, 19, 24, 42, 43, 45, 49, 57, 60, 64, 69, 71
Disease 3, 11, 19, 24, 27, 27, 32, 39, 47, 63
Disease related information - see disease
DNA decree / Royal Decree 4, 45, 49, 61-64, 66, 67, 68, 76
DNA profiling 11, 12, 40, 65, 70
DNA testing – see DNA profiling
Deceased 30, 42, 43, 66
Descent 37, 38, 39, 40, 41
Directive on the establishment of the DNA database (Germany) 37
Entidad Nacional de Acreditación (Spain) 50
EU Police Cooperation Law (Austria) 22, 25
European Court of Human Rights 73
European Network of Forensic Science Institute 40
European Standard Set 40
Eva Blanco 51
Eye colour 4, 11, 13, 33, 36, 41, 43, 46, 57, 63, 65, 66, 68, 75, 76
Familial searching 10, 39, 64, 65
Federal Criminal Police Office Act (Germany) 37, 40
Forensic intelligence reporting 56
Forensic Laboratory for DNA Research (NL) 65

Forensic Science Regulator (UK) 69, 70, 71
France 3, 29-33, 75
Freckle prediction 33
Gender (biological sex) 37-38, 40-42, 64
German Society for Legal Medicine 42
Germany 3, 36-42, 75
GDPR 15-19
Hair colour 11, 33, 57, 63, 65, 66, 67, 68, 72, 76
Home Office Biometrics and Forensic Ethics Group (UK) 69, 70, 73
Human remains 13, 27, 33, 35, 41, 47, 53, 59, 66, 72
Human rights 27, 41,
Information Commissioner's Office (ICO) (UK) 69, 70
Inquisitorial justice system/ inquisitorial procedure 27, 31, 33, 46, 49, 50, 57, 65
Instituto de Ciencias Forenses (Spain) 51, 52
Judge – see Magistrate
Law of Criminal Procedure (Spain) 50
Lisbon Treaty 22
Magistrate 29, 31, 32, 33, 46, 50, 62
Match 37, 39, 40, 65, 71
Medical 19, 30, 31, 37,
Methylation 10, 26, 47
Ministry 24, 27, 35, 41, 46, 64, 65, 67
Mitochondrial DNA 10, 25, 65
Morphological characteristics 3, 32, 33, 34, 35, 36, 75
National DNA database (NDNAD) Strategy board (UK) 69, 70
National Commission for the Forensic application of DNA (Spain) 49, 50, 53
National Consultative Ethics Committee (France) 35
National Forensics Institute (NL) 65
Non-coding regions (see coding regions)
Personal data 15-20, 43, 44-45, 49, 55, 71
Poland 3, 43-47, 75
Police Act 44-45, 48, 75
Police and Criminal Evidence Act (UK) 69, 72
Police Data Act (Sweden) 55, 58
Police Directive 16-20
Privacy 11, 15, 19-20, 24, 52, 71
Private laboratories/companies 31, 33, 46, 57, 65,
Prosecutor 27, 33, 46, 47, 50, 61, 62, 67
Protection of Freedoms Act (UK) 69, 71, 72
Prüm 20, 21, 22, 25, 26, 44, 45
Race 45, 62, 64,
Short Tandem Repeats (STRs)(also see DNA profiling) 9, 11, 12, 13, 18, 20, 22, 23, 26, 40, 45, 47,
58, 66, 72

Skin Colour 11, 13, 29, 31, 32, 33, 34, 36, 41, 51, 64, 67, 68, 75, 76
SNPs 9-10, 11-13, 47, 58, 65
Spain 4, 48-53, 76
STR profiling - see STRs; DNA profiling
Sweden 4, 54-59, 76
Swedish National Forensic Centre 55, 57, 58
The Netherlands 4, 55-67, 76
Traditional STR based analysis see DNA profiling
Trial 29, 31, 32
Tweede Kamer 63, 67
UK 4, 20-21, 68-73, 76
Working Group of Academic Forensic Geneticists 42
Y-chromosomes / Y-STR 10, 26, 58