

Biometrics and Forensics Ethics Group

Annual Report

2018



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Chair's Introduction



In 2018 I had the immense pleasure of welcoming eight new members to the Biometrics and Forensics Ethics Group (BFEG), whose diverse range of skills and expertise were selected to match the complex ethical challenges faced by the Home Office in an increasingly technology and data-driven society. The collection, retention and use of biometric identifiers enables the functioning of modern criminal justice and immigration systems, but due to the highly personal nature of biometrics, clear and transparent frameworks must be in place to mitigate any potential risks to the civil liberties of those who encounter these systems.

It is important that any development in the technologies used by the Home Office and its partners is transparent, evidence-based and properly scrutinised to ensure an appropriate respect for individual rights and to enhance public trust in government. To this end, the BFEG conducted an extensive review of police use of live facial recognition technology (LFR) in 2018. A working group of the BFEG developed a set of ethical principles to inform the use of LFR, against which other technologies used in an operational setting could be assessed in future. I look forward to the forthcoming publication of the working group's report and continued scrutiny of LFR in 2019.

To ensure the public acceptability of novel applications of technology by the Home Office and its partners, greater public consultation and engagement with wider society is required. I am encouraged, however, by new initiatives being established by the Home Office such as the National Law Enforcement Databases Programme project, the 'Open Space', with the public-participation charity, Involve. This has established a productive space where the Home Office and civil society organisations (CSOs) working on issues related to the Police National Computer and Police National Database, can have constructive conversations about the implications of the Law Enforcement Databases programme.

I would like to express my gratitude for the valuable contributions made by members of the BFEG in 2018, both to those who I will continue to work with in 2019, and those who have departed the group this year. I would also like to extend thanks to the Home Office Science Secretariat who supports the operation of the BFEG.

I look forward to an exciting and productive year for the BFEG in 2019, when we will begin to consider more carefully ethical issues and challenges relating to Home Office use of large and complex data sets.

A handwritten signature in black ink, which appears to read 'C. Hughes'.

Christopher Hughes, OBE
Chair, Biometrics and Forensics Ethics Group

Chapter 1: Vision, Mission and Principles of the Biometrics and Forensics Ethics Group

Background

The Home Office Biometrics and Forensics Ethics Group (BFEG) is an advisory non-departmental public body (NDPB). The BFEG provides independent support, advice and challenge ensuring that the evidence underpinning biometrics and forensics policy development within the Home Office is robust. Its membership includes representatives from various disciplines and professions, and it is led by an independent Chair. It publishes minutes of its meetings, an annual report, various discussion papers and advice to Home Office Ministers on the BFEG website.

Remit

The BFEG's focus is strategic and broad, complementing the legal and regulatory functions of the Biometrics Commissioner and the Forensic Science Regulator. The BFEG's remit 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 that fall within the purview of the Home Office, including the differentiation between, or identification of, individuals.

The remit for the BFEG includes, but is not limited to, consideration of the ethical aspects of:

- the application and operation of technologies that produce biometric and forensic data and identifiers;
- biometric and forensic services currently provided, techniques employed and proposals for new services and techniques;
- applications for research involving access to biometric or forensic data; and
- other matters relating to the management, operation and use of biometric or forensic data.

The BFEG may also, at the request of Ministers, consider other ethical issues relating to scientific services provided to the police service and other public bodies within the criminal justice system.

Mission

The BFEG aims to ensure that the culture of the operational frameworks to support the provision of biometric and forensic services in England and Wales place ethical considerations at the forefront of activities at all times.

Ethical Principles

In 2018 the BFEG published [a set of ethical principles](#) to underpin the group's consideration of policy issues and to provide a framework for policy makers against which to test their work. The principles (which are accompanied by a set of questions) are outlined below.

1. Governing Principles

The governing principles that should apply to the use of biometric and forensic procedures are as follows:

- procedures should be used to enhance public safety and the public good;
- procedures should be used to advance justice;
- procedures should respect the human rights of individuals and groups;
- procedures should respect the dignity of all individuals;
- procedures should, as far as possible, protect the right to respect for private and family life where this does not conflict with the legitimate aims of the criminal justice system to protect the public from harm;
- scientific and technological developments should be harnessed to promote the swift exoneration of the innocent, afford protection and resolution for victims and assist the criminal justice process; and
- procedures should be based on robust evidence.

2. Implementation of the Governing Principles

The governing principles should be implemented with due regard to the following:

- impartiality – procedures should be applied without bias or unfair discrimination;
- proportionality – balancing individual rights and the public good;
- openness and transparency;
- the need for systems to be in place to identify errors;
- the need for quality control;
- the need for public accountability;
- the need for independent oversight where appropriate; and
- the need to provide adequate information and where appropriate to obtain consent from those from whom data or samples are sought.

3. Considerations Specific to the Collection and Processing of Data

In relation specifically to the collection and processing of data the governing principles should be applied as follows:

- data should be collected, stored and used only for specified and lawful purposes;
- data collection, storage, and use must adhere to legal requirements;
- steps should be taken to ensure the accuracy, security and integrity of data collected, stored and used;
- processes should be robust and conform to international standards and be applied by professionally trained staff;
- intrusion into private lives should be minimised; and
- account should be taken of the interests of secondary data subjects (i.e. people potentially affected by data collected from others, for example, family members).

Chapter 2: Membership and Meetings of the Biometrics and Forensics Ethics Group

Members

Several members of the Biometrics and Forensics Ethics Group (BFEG) demitted in 2017 as their terms of appointment concluded. A recruitment campaign was undertaken to appoint members with the range of expertise required to advise Ministers on the BFEG's remit. Eight new members were appointed in March 2018.

The membership of BFEG (as of March 2018) was as follows:

Chair	Christopher Hughes, OBE
Members	Dr Adil Akram Professor Louise Amoore Professor Dame Sue Black Professor Liz Campbell Professor Simon Caney Professor Nina Hallowell Dr Christopher Harling, CBE Professor Mark Jobling Isabel Nisbet Professor Tom Sorell Professor Denise Syndercombe-Court Professor Jennifer Temkin, CBE Dr Peter Waggett

The biographies of members can be found in Appendix A.

Meetings

Four plenary meetings of the BFEG were held in 2018. The [minutes of these meetings](#) are published on the BFEG website.

The following individuals/organisations were represented at BFEG meetings in the capacity as observers:

- the Home Office Data and Identity Directorate;
- the Forensic Information Databases Service;
- the Forensic Science Regulator; and
- the Biometrics Commissioner.

Chapter 3: Work and Recommendations of the Biometrics and Forensics Ethics Group in 2018

The Biometrics and Forensics Ethics Group (BFEG) receives an annual commission from its policy sponsor within the Data and Identity Directorate of the Home Office. The [2018 commission](#) is available on the BFEG website. Progress against the commission is outlined below, along with details of other significant work completed during the year.

Ethical Principles

During 2016 the BFEG commenced the development of a set of high-level ethical principles for the consideration of ethical issues in relation to biometrics and forensics. A working group, led by Professor Jennifer Temkin, CBE, was established to undertake this work. Published in April 2018, the [principles](#) are available on the BFEG website.

DNA Leaflet

In June 2016 the BFEG was asked to comment on a leaflet, produced by the Forensic Information Databases Service (FINDS), entitled *DNA samples – your rights*. The leaflet had been produced to inform individuals of their rights after a DNA sample had been taken for DNA profiling in a custody suite. A working group, chaired by Professor Nina Hallowell, re-drafted the leaflet to make it more readily intelligible to a young audience and those with a limited understanding of English. The leaflet has been agreed for publication and will be distributed by the FINDS to police forces for dissemination in custody suites.

Facial Recognition

In the commissioning letter for 2018 the BFEG was asked to consider the ethical implications of the use, by the police, of live facial recognition (LFR) systems. This was in response to several police forces trialling LFR software.

A working group, led by Professor Nina Hallowell, was established to undertake this work. In addition to agreeing to draft a short report setting out some of the ethical issues pertaining to the use of facial recognition systems, the group also agreed that the Chair would provide representation to a new Home Office oversight body, the Law Enforcement Facial Images and New Biometric Modalities Oversight and Advisory Board (the Board). One of the objectives of the Board was to inform the Government's consideration of any changes to legislation and regulation regarding LFR systems.

An extensive evidence gathering process was undertaken to support the drafting of the short report. At the BFEG meeting of 5 June 2018 the Metropolitan Police Service (MPS) technical, operational and chief officer leads for LFR demonstrated the technology being trialled by the MPS. Members identified a number of limitations with the trial design and recommended that the lack of public scrutiny in advance of the trials and the associated lack of transparency should be addressed.

Recommendation 1: That the MPS encourages a greater level of public scrutiny for its trial deployments of LFR

The MPS informed members that it would be publishing an updated Data Protection Impact Assessment (DPIA) for the trials, on which the BFEG agreed to provide feedback. Feedback was received by the MPS, which agreed that this would be considered when reviewing the DPIA in 2019.

Further evidence gathering activity was carried out by the working group, including an oral evidence gathering session. During the evidence gathering process the working party gathered evidence from representatives from:

- the South Wales Police (SWP);
- the MPS (at BFEG meetings held on 5 June 2018 and 4 December 2017);
- Professor Martin Innes and Bethan Davies, Cardiff University, who conducted an evaluation of the SWP trials;
- Professor Peter Fussey, University of Essex, who has worked with the MPS, providing oversight and ethical advice for its trials;
- the Home Office Police Digital Service (PDS) regarding its trials of facial recognition for the location of missing persons;
- a representative of the Defence Science Technology Laboratory (Dstl) involved in the development of facial recognition standards for ISO, the International Organization for Standardization;
- the Biometrics Commissioner's (BC) Office;
- the Security Camera Commissioner's (SCC) Office;
- the Information Commissioner's Office (ICO);
- the Forensic Science Regulator; and
- civil society groups Big Brother Watch and Liberty.

The report comprised a briefing section, a set of ethical principles for the use of LFR and a set of questions to accompany the principles. The report recommended that, pending the development of a legislative framework, police trials of LFR should comply with the usual standards of experimental trials, including rigorous and ethical scientific design. The draft report was discussed by the BFEG at [its meeting of 3 December 2018](#) and, pending some minor changes, was agreed for publication.

Recommendation 2: Pending the development of a legislative framework, police trials of LFR should comply with the usual standards of experimental trials, including rigorous and ethical scientific design.

Home Office Biometrics Programme

In 2016 the BFEG established a working group, chaired by Isabel Nisbet, to provide ethical and privacy advice on a range of Privacy Impact Assessments (PIA) that are integral to the Home Office Biometrics (HOB) programme. The HOB programme has been designed to deliver a unified biometric service for the Government consisting of three main modalities: DNA; fingerprint identification; and facial recognition. The programme will run until 2021 and provides continuity of existing services and cost savings while developing future capabilities.

In 2018 Professor Tom Sorell joined the BFEG HOB Working Group. The group met on four occasions and continued to provide ethical and privacy advice on a range of PIA integral to the HOB programme. These included:

- [the HOB programme's overarching PIA](#) (published alongside the HOB Strategy in June 2018);
- [The PIA on law enforcement fingerprint searches on immigration data](#), and
- [the strategic mobile PIA](#).

With the implementation of the [General Data Protection Regulation 2018 \(GDPR\)](#) in May 2018, the format of the HOB PIA was updated to a new DPIA template. Members advised that the scope of the DPIA should be sufficiently broad and should address human rights and the societal impact of Home Office actions, in addition to matters of data protection.

Recommendation 3: The scope of DPIA introduced alongside GDPR should be sufficiently broad and should address human rights and the societal impact of Home Office actions, in addition to matters of data protection.

Data Ethics

At its meeting of 5 June 2018, the BFEG was invited to extend its remit to include ethical issues relating to large and complex datasets including independent oversight of the Home Office Data Ethics Governance Framework.

Subsequently, the BFEG considered issues regarding the ethical treatment of large datasets from two teams within the Home Office and received an introductory presentation on the newly established Centre for Data Ethics and Innovation (CDEI). The CDEI, sponsored by the Department for Digital, Culture, Media and Sport (DCMS) was set up to advise on maximising the benefits of data-enabled technologies and the development of appropriate governance. The BFEG was open to future collaboration with the CDEI as their work developed.

Home Office

At the BFEG meeting of 20 September 2018, members had presentations from two teams within the Home Office to consider data ethics issues they had encountered. The first presentation was from representatives of the Data Analytics Competency Centre (DACC), the Home Office's centre for data science. Members were asked to comment on the ethical considerations embedded into current DACC processes, including the development of analytics tools developed using Home Office data. Since conscious or unconscious bias (including algorithmic bias) had the potential to be built into DACC analytical tools, members advised that external philosophical input would be helpful in identifying bias. It would also be important to assess the outputs of the analytical tools to minimise harms and maximise public benefit. The Home Office DACC team were invited to return to a future BFEG meeting with any further specific ethical issues for advice.

The second presentation was from representatives of the National Law Enforcement Databases Programme (NLEDP), established to replace and consolidate the Police National Database (PND) and Police National Computer (PNC) with a cloud-based platform, the Law Enforcement Data Service (LEDS). A set of principles had been developed by the NLEDP to unpick the challenges and ethical impact of data quality. Members suggested broadening of the NLEDP principles to encompass ethical issues in addition to privacy issues (which were related though distinct). Further iterations of the NLEDP principles could be brought to the BFEG for review.

The BFEG was also informed of the LEDS 'Open Space'. The Open Space platform sought to formalise the NLEDP's engagement with civil society stakeholders with a policy interest in the activities of the programme and LEDS. In December 2018 the HOB joined the LEDS Open Space and as such it was agreed that the remit of the BFEG's HOB Ethics Working Group (HOB EWG) would expand to cover the LEDS in addition to the HOB. The Chair of the BFEG's HOB EWG agreed that the NLEDP programme presented similar ethical issues to those arising from the HOB programme, including necessity and proportionality and the technological and security risks that arise when datasets were brought together.

DCMS

At its meeting of 3 December 2018, the BFEG received an update from the CDEI. The BFEG had responded to a DCMS public consultation launched to gather views on the aims and objectives of the CDEI. In addition, the BFEG was provided with an update on the DCMS Data Ethics Framework, which set out principles for how data should be used in the public sector. A discussion was held around how the work of the BFEG might dovetail with that of the CDEI and where opportunities for collaboration may arise. The ethical framework would be revisited in the new year, at which point a more detailed discussion with the BFEG would be held. Algorithmic bias was being scrutinised by the BFEG's Facial Recognition Working Group (FRWG) as part of its ongoing analysis. The DCMS welcomed the ongoing sharing of any findings.

Forensic Information Databases Strategy Board

The Forensic Information Databases Strategy Board (FIND SB) provides governance and oversight for the operation of the National DNA Database (NDNAD) and the national fingerprint database. The BFEG Chair sits on the FIND SB as an *ex-officio* member.

The BFEG continued to be commissioned by the FIND SB and were asked to advise on ethical issues arising in connection with FINDS business. This advice is summarised below.

- **Extending the Loci on the Missing Persons DNA Database (MPDD).** The BFEG was asked for advice on a proposal by the FIND SB to increase the number of DNA markers (loci) retained on the MPDD from the 17 markers in the DNA-17 profiling chemistry to over 20 markers generated by other NDNAD approved chemistries. Under the proposal the MPDD would retain all the information from the additional loci generated when a DNA profile was obtained from a sample, enhancing the match process for both confirmation and elimination purposes. Currently any loci that were not contained within the DNA-17 set of loci were not used for MPDD purposes. The BFEG supported the proposal.
- **Retention of DNA Profiles for likely Serial Serious Offenders.** The FIND SB sought BFEG members' views on the retention of DNA profiles on the NDNAD in instances in which the donor had passed away before the DNA sample was taken, or before the individual was charged, and where after an investigation it had been found that it was likely the individual had committed serial serious offences. An example where this policy had been used was in the Fred West murder case, where a post-mortem sample was taken for DNA as Fred West had committed suicide prior to conviction. Members were asked if they felt it appropriate to store a deceased individual's DNA profile on the NDNAD to help solve any outstanding crimes. Although some considered that the draft policy set quite a high bar for retention of a subject profile (requiring that the offence was both serious and potentially serial in nature), members agreed with the proposal as presented.
- **Access and Use of the Police Fingerprint Elimination Database.** A proposal to standardise governance arrangements for the access and use of the elimination databases for fingerprints and DNA was presented to BFEG members. Members' views were sought on whether any ethical issues existed if the arrangements for the DNA elimination database were applied to the fingerprint elimination database. The BFEG concluded that it would be appropriate to use governance arrangements for the DNA elimination database as a model for the fingerprint elimination database. This

would ensure that standards were applied consistently to the DNA and the fingerprint elimination databases.

- **British Red Cross Access to the Missing Persons DNA Database.** The BFEG was asked to review a proposal by FIND SB on behalf of the National Crime Agency Missing Persons Unit (NCA-MPU) to carry out a trial in collaboration with the British Red Cross (BRC) and its international counterpart, the International Committee of the Red Cross (ICRC). The trial would facilitate the exchange of a limited number of DNA profiles between the UK, Italy and Greece with the purpose of identifying dead migrants. The trial would be carried out by obtaining DNA-17 profiles and sending these to the designated country for a kinship comparison. The BFEG raised concerns on whether the receiving countries would have sufficient capability to analyse the profiles and draw conclusions on relatedness. Appropriate reference databases held for the population of origin of the migrant would be required to decrease the likelihood of misleading results from familial searches. Members also noted the importance of obtaining permission for the retention of samples and for clarification of the retention period. Whilst it would be important to ensure that family members understood that the trial could not guarantee an accurate result, the BFEG believed that the trial had merit and reached a qualified agreement to support the trial.
- **EU VISAGE Project.** The Metropolitan Police Service (MPS) had requested approval from the FIND SB to conduct research on humans and collect human samples as part of the [EU VISAGE project](#). The EU required that all laboratories collecting human samples seek consent from volunteers by way of a consent form and that each laboratory gained evidenced ethical approval to conduct research on humans. The BFEG was asked for its views on the research proposal. The group concluded that there were significant issues with the proposal as presented and that further information was required before consent to proceed should be given by the FIND SB. Once this information had been obtained, a further discussion was invited.
- **Genetic Genealogy.** At its meeting of 20 September 2018, the BFEG was informed by the FIND SB that several police forces had received queries around the potential to search DNA profiles obtained from UK crime stains against commercial genetic genealogy databases. This was in the context of the ‘Golden State Killer’ case in the USA. At this meeting the BFEG cautioned against using this approach in the UK. Aside from the issues of incompatibility of genealogy testing (which would be carried out in an unaccredited environment) to that used in the criminal justice system (CJS), the ethical and privacy issues of using DNA profiles provided for genealogy purposes were considerable. A follow-up discussion was held at the BFEG meeting of 3 December 2018 when members noted that familial searching of the UK NDNAD to identify near relatives of the forensic DNA profile could be conducted (pending ethical approval of the FIND SB). Data on the implementation and effectiveness of familial searches using the current UK system were lacking and so it was recommended that these data were obtained to understand how well the current system was working prior to recommending how alternative methods might be utilised. Since familial searches were agreed by the Chair of the FIND SB the secretariat would liaise with the FIND SB and it was agreed that once the data had been obtained this issue would be considered again at a future BFEG meeting.

Recommendation 4: Data on the use and success of familial searching using the UK NDNAD system should be obtained and analysed prior to consideration of any alternative methods of identifying relatives in criminal forensic investigations, such as the use of genetic genealogy.

BFEG response to Scotland Biometrics Public Consultation

In July 2018 a public consultation was launched by the Scottish Government concerning the proposal to provide independent oversight of biometric data used by the police and other organisations in Scotland. This included introducing a statutory code of practice and establishing a Scottish Biometrics Commissioner. The [BFEG Ethical Principles](#) had been adopted in the code of practice as the ethical framework under which the Commissioner would operate.

The BFEG provided a response to the consultation and welcomed the introduction of independent oversight of biometric regulations in Scotland since the model of independent oversight performed by the Biometric Commissioner for England and Wales appeared to work well.

The majority of the members of the BFEG agreed that a statutory code of practice would promote public confidence and transparency in the justice system and assist in ensuring that human rights were protected.

Chapter 4: Update on Previous Recommendations Made by the Biometrics and Forensics Ethics Group

The table below shows progress against recommendations from previous Biometrics and Forensic Ethics Group (BFEG) annual reports. Recommendations that have been implemented have not been shown.

Report	Recommendation	Progress made	Date for completion
2017	A public consultation should be conducted prior to the next scheduled Custody Images Review (CIR), to ascertain the views of the public in relation to the retention and use of custody images..	Although the policy sponsor accepted the advice, a commitment to hold a public consultation could not be made; this would be a decision for Ministers to take at the time of the CIR.	Next CIR is in 2020.
2017	Future Home Office IT systems should allow for the centralised storage and automatic deletion of custody images. The retention regime governing these IT systems should be agreed prior to the development of new technology.	The Home Office Biometrics Strategy published in June 2018 included a commitment to increase automation in the deletion of custody images. This would be achieved within the new National Law Enforcement Data Service (NLEDS) platform, which was to replace the Police National Computer (PNC) and Police National Database (PND).	NLEDS delivery has been significantly delayed. The Home Office is working with the police service and Home Office Biometrics to see whether an automatic custody image deletion regime can be delivered more quickly. This work is at a relatively early stage.

Report	Recommendation	Progress made	Date for completion
2017	It will be necessary to explore the aggregated implication of interactions between the Home Office National Law Enforcement Databases Programme (NLEDP), the Home Office Biometrics (HOB) programme, and programmes to upgrade the emergency services network and the automatic number plate recognition system, as these may interact with each other in the future.	The remit of the HOB Ethics Working Group expanded to consider ethical issues arising from the LEDS to ensure joined-up oversight of the programmes. This is in addition to the establishment of an 'Open Space' group for LEDS and HOB for the consultation of civil society groups.	2019
2017	A fixed retention period be defined for biometric data from convicted offenders. Retention until an individual reached 100 years of age was selected as a suitable period of retention given that it encompassed the entire life span of most individuals whose records were held on the PNC.	Further work on the retention period of biometrics would depend on a forthcoming review of retention periods for conviction information being carried out by the ACRO Criminal Records Office and the Home Office and on the pending European Court of Human Rights judgment in the Gaughran case .	2019
2017	There would be value in considering differential retention periods for certain individuals. Specifically, those convicted at a relatively young age (but above 18 years of age) of offences which, whilst relatively minor, were sufficiently serious to allow for their biometrics to be retained indefinitely under the current legislation.	As above.	
2017	Research into patterns of reoffending was limited, which meant that it was difficult to understand the utility of holding biometric data from an individual indefinitely or for long periods of time, following their latest conviction. The BFEG would be supportive of commissioning research that would provide evidence of patterns of reoffending.	As above.	

Report	Recommendation	Progress made	Date for completion
2017	In response to a public consultation launched by the Scottish Government, the BFEG welcomed independent oversight of biometrics by a Biometric Commissioner in Scotland.	The Scottish Government announced their intention to introduce a Biometric Data Bill in September 2018. The Bill would provide a legislative basis for the creation of an independent Scottish Biometrics Commissioner and a code of practice, as proposed in the consultation document.	The Bill was expected to be introduced by June of 2019.
2017	The BFEG was supportive of the extension of a Metropolitan Police Service (MPS) Y-short tandem repeat (STR) pilot for a defined period with the caveat that details on the criteria for the evaluation of the pilot should be shared with the BFEG.	Work on this pilot has been suspended as a result of changed priorities.	The BFEG will review detail on this pilot when work recommences.
2016	Research was required to analyse the impact of rapid DNA technology on criminal investigations and outcomes. A cost-benefit analysis of the technology should also be undertaken.	Police forces have done evaluation work on rapid DNA, including cost-benefit analysis, which has been reported to the Forensic Information Databases Service Strategy Board. Broadly, technical and quality control issues have been addressed, but the costs are currently too high for it to be used to a significant extent, though the technology will be kept under review in case this change.	The BFEG will review Rapid DNA technology if use changes.

Chapter 5: Future Work Plans

The BFEG received its 2019 commissioning letter in February 2019. The following priority areas were outlined for the BFEG to consider.

1. Biometrics Governance Review

- The HOB Strategy published in June 2018 committed the Home Office to undertake a review of the options for biometrics governance. The BFEG has been asked to advise on the HOB governance review, paying special attention to data sharing and oversight arrangements.

2. Home Office Biometrics Programme

- The BFEG will continue to advise on the HOB programme and its Data Protection Impact Assessments.

3. Facial Recognition

- Following the publication of the BFEG's interim report on ethical issues arising from police use of live facial recognition (LFR) technology, the BFEG has been asked to advise on:
 - specific projects considering the use of LFR;
 - LFR collaborations between police forces and private entities; and
 - the use of publicly available images.

4. Use of Large and Complex Datasets

- The BFEG has been asked to advise projects considering the adoption and/or use of explainable data-driven technology on ensuring that stakeholders understand how and why decisions or conclusions are reached. Themes may include:
 - the automated categorisation of sensitive data;
 - anomaly detection;
 - rule evaluation in decision making; and
 - analysis of digital evidence.

5. Development of the Home Office Data Ethics Framework

- To ensure ethical consideration of the use of data throughout the policy-making lifecycle, the BFEG has been asked to:
 - advise on the development of a data ethics framework; and
 - with reference to the other working groups, consider what relationship the framework should have with the BFEG Ethical Principles (April 2018) – the principles that the BFEG developed to guide police trials of facial recognition (February 2019) and the Government Data Ethics Framework (June 2018).

Chapter 6: Resources

Costs

The Biometrics and Forensics Ethics Group (BFEG) is sponsored by the Home Office budget. Expenditure for 2018 was £2,739 with costs associated with the provision of meeting facilities and expenses properly incurred by group members in undertaking their duties. Members are unremunerated for their activities on behalf of the BFEG.

Secretariat

The BFEG Secretariat support has been provided by the Home Office Science Secretariat, with costs for the Secretariat met from the Home Office Security, Science and Innovation budget.

Appendix A: Biographies of Biometrics and Forensics Ethics Group Members

Christopher Hughes, OBE (Chair)

Chris devotes his professional time to a range of part-time public and judicial appointments.

In his judicial capacity he sits in the Health Education and Social Care Chamber dealing with the rights of individuals detained in psychiatric hospitals, and in the General Regulatory Chamber resolving disputes about access to information held by public bodies (Freedom of Information), environmental issues, as well as other cases.

Among his public appointments he has served as Chair of a statutory regulator and as Chair of a forum advising Ministers on chemical regulation. He serves on the Audit Committee of the Open University and is an alternate Chair of the Board of Appeal of the European Chemicals Agency. He has been a member of health and local authorities and served on a regulatory board of the Law Society. He was for many years the Chief Legal Adviser to the British Medical Association and prior to that a lawyer in local government service.

He holds degrees from Cambridge, London and the Open University and is a chartered biologist.

Dr Adil Akram

Adil is a consultant psychiatrist; based mainly at South West London and St George's Mental Health NHS Trust from 2009 onwards. He is also an honorary senior lecturer at St George's, University of London. He has published on antipsychotics, perinatal psychiatry, parenting with mental illness and the social care needs of women with mental illness. He has qualifications in healthcare education and mental health research. He has a longstanding interest in genetics, medical ethics and medical law from his time studying medicine at King's College, University of Cambridge. He has significant experience of dealing with complex ethical dilemmas and risk assessments.

Adil also works for the Ministry of Justice as a judicial officer and medical member of the first-tier tribunal service, hearing detained patient appeals under the Mental Health Act. He has detailed knowledge and experience of legislation relevant to mental health. His other roles and contributions to public service have included working with the General Medical Council to help to write and develop tests of competency, being a shadow governor of his local NHS Trust and volunteering as a psychiatrist at the London 2012 Olympic Games.

Professor Louise Amoore

Louise is a professor of human geography at Durham University. Her research expertise is focused on the geographies of biometric and security technologies, with a particular interest in how contemporary forms of data, analytics and risk management are changing the techniques of biometric data collection and analysis. Louise is currently a Leverhulme Major Research Fellow investigating how the foundation of law, ethics and accountability is challenged by new methods of machine learning and automated recognition.

Professor Dame Sue Black

Sue is the pro-vice-chancellor for engagement at Lancaster University. She leads on developing the university's culture of engagement, working at local, regional, national and international levels to shape the university's engagement strategy. She was previously director of the Leverhulme Research Centre for Forensic Science, School of Science and Engineering, University of Dundee. She is a forensic anthropologist with research interests including the pattern of features on the back of the hand as a unique identifier, interpreting dismemberment, the prediction of body movements in water and age estimation using medical imaging and gait analysis. Sue has previously provided advice to the UN, the House of Commons, and the Scottish Government.

Professor Liz Campbell

Liz is the inaugural Francine McNiff Chair in criminal jurisprudence at Monash Law, Australia, having previously been professor of criminal law at Durham University. She is also adjunct professor at Queensland University of Technology School of Justice.

Liz is a global expert in corporate crime, organised crime, corruption, and biometric evidence. Her research is socio-legal in considering the law in context, and often involves a comparative dimension. Liz's research has a significant impact outside academia. Her research has been cited by the Irish Supreme Court and relied upon in arguments before the UK Supreme Court. Her work has also been cited in reports of law reform commissions.

Liz sits on a number of editorial boards and is a member of the UK's Arts and Humanities Research Council Peer Review College. Liz previously chaired Durham Constabulary's Ethics Committee and served on the NHS Research Ethics Committee (Scotland).

Professor Simon Caney

Simon is a professor in political theory at the University of Warwick. He has worked on a wide range of topics including global poverty, equality, climate change, our obligations to future generations, the social discount rate, liberal neutrality, political perfectionism, multiculturalism, national self-determination, secession, sovereignty, human rights, resistance, humanitarian intervention, war, non-ideal political theory, realism in international relations, and democratic theory. He has engaged with policy makers at the World Bank, the Trades Union Congress, Oxfam America, and the UN, and is a member of the Nuffield Council for Bioethics.

Professor Nina Hallowell

Nina is a senior researcher at the Ethox Centre, Nuffield Department of Population Health, University of Oxford, where she is involved in a programme of research on ethical issues arising from the use of big data. She has over 20 years of experience of undertaking research on the social and ethical implications of the introduction of genetic and genomic technologies in medicine and has published widely in this field. She has qualifications in social sciences and medical law and ethics. She taught ethics at the University of Edinburgh and has been a member of a number of research ethics committees in Edinburgh, Cambridge and Newcastle.

Dr Christopher Harling, CBE

Kit retired from his career as a consultant physician in occupational medicine, director of NHS Plus, and senior policy adviser at the Department of Health in 2011. He has been a member of a number of medical advisory bodies, particularly concerning blood-borne viruses. He has a particular interest in medical ethics having chaired his specialties Ethics Committee for eight years and published guidance and book chapters in the UK and Europe. He has also taught ethics to postgraduate medical students.

Since retirement, Kit has completed a master's degree in marine biology at Plymouth University and is currently studying for a PhD in the Engineering and Environment Faculty at the University of Southampton.

Professor Mark Jobling

Mark is a professor of genetics at the University of Leicester, specialising in human and medical genetics, human evolution, forensics, genetic genealogy, ancestry testing and genetics in historical studies. He is a senior editor of the *Annals of Human Genetics*, co-director of the Alec Jeffreys Forensic Genomics Unit and was the Research Excellence Framework academic lead for biological sciences in 2014.

Isabel Nisbet

Isabel has a strong academic background in moral philosophy, with additional knowledge of medical law and ethics.

Isabel has previously held a variety of senior posts in the civil service, and then moved on to work in the regulation of medicine and education. She has held chief executive and director positions at several statutory regulatory bodies (including Ofqual [Office of Qualifications and Examinations Regulation] and the General Medical Council), giving her extensive experience of dealing with complex and sensitive human rights, fairness and public confidence issues.

She is a member of the National Statistician's Data Ethics Group and of the Board of Qualifications Wales (the regulator of examinations and qualifications in Wales). She serves on the Board of Governors of two higher education institutions (the University of Hertfordshire and the University College of Osteopathy). She is also a member of the British and Irish Ombudsman Association and from 2004 to 2011 she was an independent member of the Council of St George's Medical School.

Professor Tom Sorell

Tom is a professor of politics and philosophy at the University of Warwick, where his primary research interests include moral theory, applied ethics, political theory and public policy, relations between philosophy and science, and philosophical aspects of human rights. Tom has previously sat on ethics committees at the Universities of Essex and Birmingham, and currently sits on the editorial boards of several philosophical journals. He has commercial consulting experience in business and export ethics.

Professor Denise Syndercombe-Court

Denise is a professor of forensic science at King's College London. Her experience includes scientific research, forensic evidence examination and DNA interpretation, and the civil and criminal justice process, including court presentation as an expert witness. She is a specialist in complex DNA profiling interpretation, forensic genetics and blood pattern analysis. Denise is the secretary-general of the British Academy of Forensic Sciences and has an active interest in promoting science to a wider audience via television, radio and external lectures.

Professor Jennifer Temkin, CBE

Jennifer is professor of law at City, University of London and emeritus professor of law at Sussex University. She is a Bencher of the Middle Temple and a Fellow of the Academy of Social Sciences. Her specialist area is criminal justice, particularly in relation to sexual offences. She has published widely in this field and her books include *Rape and the Legal Process* (2002) and *Sexual Assault and the Justice Gap* (2008) with Barbara Krahe. She has been a frequent contributor to discussion in the media. She has also engaged in training programmes for Crown prosecutors, judges, barristers and doctors. In connection with her work, she has served on the following committees:

- Old Bailey Scrutiny Committee on Draft Criminal Code, 1985–1986;
- Home Office Advisory Group on Video-Recorded Evidence in Criminal Trials [The Pigot Committee], 1988–1989;
- National Children's Home Committee of Enquiry into Children and Young People Who Abuse Other Children, 1990–1992;
- SCOSAC (Standing Committee on Sexually Abused Children), 1993–1996, Patron (with Dame Margaret Drabble);
- Justice Committee on Sexual Offences Law Reform, 1998;
- External Reference Group, Home Office Sex Offences Review, 1999–2000;
- Scientific Expert, Council of Europe's Committee of Experts on the Treatment of Sex Offenders, 2003–2005;
- Expert Group on Rape and Sexual Assault, Victims of Violence and Abuse Prevention Programme, Department of Health and National Institute for Mental Health in England, 2005–2007;

- Disability Forum, Disability Protection Project, Handicap International, 2010, Expert Advisor;
- Board of Diploma in the Forensic and Clinical Aspects of Sexual Assault (DFCASA), Society of Apothecaries of London, 2010–2012.

At City, she now teaches a course entitled 'Forensic Science and the Legal Process'. She chaired the BFEG's Working Group on Ethical Principles.

Dr Peter Waggett

Peter is the director of research at IBM, making him responsible for all aspects of research conducted in the UK, and represents the UK in IBM's wider research agenda. He holds multiple patents relating to biometrics and imaging systems and is editor of a number of biometric standards. Peter has a PhD in image processing and was the biometrics lead responsible for specifying, evaluating and testing the UK's visa waiver system.

Glossary

Automated recognition	Automated recognition implies that a machine-based system is used for recognition of a biometric identifier, either for the entire process or assisted by a human being.
Biometrics Commissioner	The Biometrics Commissioner is independently appointed to provide oversight of the regime established by the Protection of Freedoms Act 2012 to govern the retention and use by the police in England and Wales of DNA samples, DNA profiles and fingerprints. The Biometrics Commissioner also has a UK-wide oversight function as regards their retention and use by the police on national security grounds.
Biometric information	Information about an individual's physical characteristics such as fingerprints or eye colour, which are discriminating and measurable.
Biometric recognition	Biometric recognition is the automated recognition of individuals based on their biological and behavioural characteristics, for example, facial image, DNA, voice and gait.
Central Elimination DNA Database (CED)	The CED is a centrally held database of DNA profiles taken from individuals who have a role where there is a risk that they may inadvertently contaminate a DNA sample taken from a crime scene with their own DNA. This includes s DNA consumable manufacturing staff, forensic laboratory staff, crime scene examiners and police officers.
Crime scene stain	Biological material recovered from the scene of a crime from which DNA may be able to be extracted and profiled.
Crown Prosecution Service (CPS)	Established in 1986, the CPS prosecutes criminal cases investigated by the police in England and Wales. It advises the police; reviews cases submitted by the police; and prepares and presents papers for cases in court.
Custody images review (CIR)	Review by the Home Office to consider proportionality of the use and retention of images on a national database.
Data Protection Impact Assessment (DPIA)	A tool to identify and minimise the data protection risks associated with a project.
Deoxyribonucleic Acid (DNA)	The chemical in the cells of an organism that carries that organism's heritable material used in the development, functioning and reproduction of all known living organisms. DNA is a nucleic acid and consists of two strands coiled around each other to form a DNA double helix. Each DNA strand is composed of smaller units called nucleotides and the sequence of these nucleotides encodes biological information.
Elimination DNA sample	A DNA sample taken from an individual and used to create a DNA profile in order to identify possible DNA contamination. <i>[See also Central Elimination DNA Database]</i>

Facial recognition system	A computer application capable of identifying or verifying a person from a digital image or a live video source by comparing it to selected facial features from a known source image.
Familial searching	Involves searching the National DNA database for profiles that may have come from a close relative. As half a person's DNA is inherited from the mother and half from the father, relatives such as parents, children, and siblings, will share a predictable amount of DNA.
Fingerprints	The impression left by the epidermal ridges in a human finger. The print consists of a mixture of sweat and skin cells.
Forensic Information Databases Service (FINDS)	The Home Office unit responsible for administering the National DNA Database, National Fingerprint Database and Footwear Database.
Forensic Information Database Strategy Board (FIND SB)	The FIND SB provides governance and oversight over the National DNA Database and the National Fingerprint Database. It has a number of statutory functions including issuing guidance on the destruction of profile records and producing an annual report.
Forensic Science Regulator (FSR)	The FSR ensures that the provision of forensic services across the criminal justice system is subject to an appropriate regime of scientific quality standards. The FSR works with the Home Office.
Genetic Genealogy	Genetic genealogy uses powerful DNA analysis, distinct from STR DNA profiling, to identify individuals who may be related by searching the genetic genealogy database (GEDmatch) for other individuals who share common sections of DNA. The likely relationship between individuals is predicted from the amount of DNA in common. A short list of individuals with common DNA is then used by genetic genealogists to construct family trees and attempt to identify a common ancestor.
Home Office Biometrics Strategy	This strategy, published in June 2018, sets out how the Home Office and its partners currently use biometric data, and how they will approach all future developments.
IDENT1	IDENT1 is the name given to the UK's fingerprint system supporting law enforcement.
Information Commissioner's Office (ICO)	The ICO upholds information rights in the public interest, promoting openness by public bodies and data privacy for individuals. The ICO is an executive non-departmental public body, sponsored by the Department for Digital, Culture, Media and Sport.
International Standards Organisation (ISO)	The ISO is an independent, non-governmental international organisation. It brings together experts to share knowledge and develop international standards that are voluntary, consensus-based and market relevant.
Live facial recognition (LFR)	LFR is the automated one-to-many 'matching' of near real-time video images of individuals with a curated 'watchlist' of facial images.
Missing Person DNA database (MPDD)	The MPDD is a database containing DNA profile records of missing persons, relatives of missing persons (where a reference DNA profile is not available for the Missing Person), unidentified bodies and some crime stain DNA profile records that may be linked to missing persons or unidentified bodies (e.g. no-body murder case).

National DNA Database (NDNAD)	Established in 1995, the NDNAD is an electronic, centralised database holding the STR DNA profiles taken from both individuals and crime scenes. The database can be searched to provide the police with a match to an individual or a match linking an individual to a crime scene and <i>vice versa</i> .
Privacy Impact Assessment (PIA)	The PIA is a tool for identifying and reducing the risk that a project poses to an individual's right to privacy. This tool has now been replaced by the Data Privacy Impact Assessment (DPIA).
Protection of Freedoms Act 2012 (PoFA)	The PoFA is an Act of the UK Parliament. It was introduced by the Home Secretary in 2011 and sponsored by the Home Office. In May 2012 the Bill completed its passage through Parliament and received Royal Assent.
Rapid DNA technology	Is a portable technology that has the ability to produce a DNA profile much faster than can be done using conventional technology.
Short tandem repeat (STR)	STRs are sections of DNA dispersed within coding and non-coding regions of the human genome that contain variable numbers of adjacent repeats of a short sequence of DNA (two to six nucleotides). The number of times the sequence of DNA is repeated varies between individuals and by looking at a number of these repeating areas it is possible to discriminate between individuals. <i>[See also STR DNA profile]</i>
STR DNA profile	A numerical representation of the number of short tandem repeats (STRs) at a set of locations (loci) scattered throughout an individual's DNA. A DNA profile also includes markers for the presence of the sex chromosomes, X and Y. The number of markers tested depends on the profiling chemistry used, DNA-17 looks at 17 markers, other chemistries look at over 20 markers (20+ chemistries). The numerical representation allows DNA profiles to be uploaded to a database and compared with other DNA profiles. <i>[See also short tandem repeat]</i>
Surveillance Camera Commissioner	The role of the Surveillance Camera Commissioner is to encourage compliance with the surveillance camera code of practice. The office of the commissioner was created under the Protection of Freedoms Act 2012 to further regulate CCTV.
Watchlist	A curated set of facial images used in facial recognition systems.
Y-STR	Is a form of DNA analysis involving only DNA found on the Y chromosome. Analysing Y chromosome DNA can be useful in cases where this is a mixture of DNA from a male and a female as the Y chromosome is only found in males.



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