



Equality Impact Assessment

A practical tool to identify discrimination

What is an Equality Impact Assessment?

An Equality Impact Assessment (EIA) is an evidence-based assessment of how the Forces' Guidance, Procedures or Projects will positively support the Forces' general equality duties.

Why do we need an EIA?

Completing the EIA will help you analyse Guidance, Procedures or Projects aims and objectives to make sure they do not discriminate or disadvantage people. Discrimination is where someone is treated less favourably or put at a disadvantage because of their protected characteristic.

Improving or promoting equality is when you identify ways to remove barriers and improve participation for people with a protected characteristic. The vast majority of organisations and their managers do not set out to discriminate on purpose against their staff, clients, customers or members of the public.

Discrimination is usually unintended and can even remain undetected until someone complains or is let down by the system or the service they have received. This is how indirect discrimination can work and why EIA's are used to identify this disadvantage and to take appropriate steps.

The EIA will identify any potential negative disproportionate impacts on people or groups of people, specifically those identified as having a protected characteristic as identified in the Equality Act 2010. The EIA will also outline any steps required to mitigate any negative impact as well as identify ways to promote equality of opportunity.

When should you carry out an EIA?

An EIA should be completed as part of a new project and when making changes to a project to form part of the Guidance and Procedure documentation.

How do you carry out an EIA?

The EIA will identify any potential negative disproportionate impacts on people or groups of people, specifically those identified as having a protected characteristic as identified in the Equality Act 2010. The EIA will also outline any steps required to mitigate any negative impact as well as identify ways to promote equality of opportunity.

The EIA is in two parts:

1. It is compulsory to complete Part 1 & 2 in relation to each Guidance, Procedure or Project. This should be undertaken prior to a Guidance, Procedure or Project being developed or reviewed. Completion of part 1 & 2 will determine whether it is necessary to complete Part 3 which is the full EIA.
2. Part 3 is a full EIA which is completed when the initial screening (part 1&2) has indicated that a Guidance, Procedure or Project has potential for differential / adverse impact.

All - Please complete Part 1 & 2

Part 1 – Initial Assessment

If assistance is required to confidently complete either the initial or the Full EIA, please contact the ED&I team Tracy Pitt and Selina Moyo & or your designated HR Business Partner

Title:	Facial Recognition Technology – <i>Retrospective, Live and Operator Initiated</i>
Department Responsible:	Digital Services Division
Completed By:	Jayne Evans 57788
Date:	10/08/21

Change Control

Version	Date	Authority	Evidence of approval	Record of change
1.1	10.08.2021	Project Support	Jayne Evans	Initial Draft
1.2	13.12.2021	Project Manager	Sgt Rhodri James	National terminology, OIFR initial testing results
1.3	24.04.2021	Project Lead	Insp Andrew Hedley	Review of document and addition of engagements
1.4	09/05/2023	Project Lead	Insp Ben Gwyer	Review of documents and amendment following consideration of NPL Equitability findings

Please answer the following questions:

1 .Summarise the main aim(s) of the Guidance, Procedure or Project. What do you want to achieve?
The purpose of this Equality Impact Assessment (EIA) is to ensure that the use of Facial Recognition Technology (FRT) in South Wales Police has due regard to equality considerations when exercising each of its functions and does not inadvertently discriminate against any protected group.

South Wales Police (SWP) first utilised FRT technology in 2017 and have continued to learn and develop its use. Supported by the same software, technology and algorithm the SWP FRT project is made up of three areas:

1. RFR - Retrospective Facial Recognition (RFR)
2. LFR - Live Facial Recognition (LFR)
3. OIFR – Operator Initiated Facial Recognition (Mobile phone) (OIFR)

This EIA covers the FRT portfolio and will be reviewed at distinct phases throughout the project.

FRT relies on physical features and when a face is captured by the technology it generates a biometric template. This is then compared to a predetermined reference image database of individuals in attempt to assist the user verify whether a face is a match to one of those on the predetermined reference image database.

1. Retrospective Facial Recognition (RFR)

RFR is a post event use of FRT which compares still images of faces of unknown subjects against the reference image database in order to identify them. The reference image database for RFR is the SWP Custody image dataset, and all custody images will have a biometric template created at the point of enrolment to the FRT system.

An RFR probe image is any facial image which is searched against the reference image database and can be retrieved from a variety of sources, most commonly CCTV systems, digital cameras, mobile phones and social media, although any source of image will be considered.

2. Live Facial Recognition (LFR)

Live Facial Recognition is Live-time Deployment of FRT which compares live camera images of members of the public against a predetermined reference image database (Watch List) in order to locate persons of interest.

Once an operator is notified of a potential match to the watch list, they are required to make a decision on disregarding the potential match or alternatively request that officers either engage with that individual to establish their identity or due to the associated risk monitor that person awaiting further instruction, in line with SWP procedures and policies.

Once Identity is confirmed the engagement officer has a range of options which can include arrest or summons. Where the identification is to ensure an individual's safeguarding it may also involve implementing safeguarding referrals or notification of responsible carers.

The cameras utilised by the operator can be either a mobile solution where cameras are mounted on a vehicle or a static Deployment where the cameras are placed within a venue. Live facial recognition is not a covert technology and during operational Deployments vehicles and locations will have clear signage identifying the use of the technology and leaflets explaining its use.

3. Operator Initiated Facial Recognition (OIFR)

The OIFR, introduced to SWP as a pilot in December 2021, enables the user to take a photograph of the subjects' face on their mobile device and compare with facial biometric data from images contained in the South Wales and Gwent image reference database.

OIFR can only be utilised if both a reason for use and ground for use exists. Use of OIFR will only occur when the identity of a subject is not known and at least one of the following reasons for use applies:

- The subject is unable to provide their details (deceased, unconscious, incapacity through drink or drugs, mental health or age barriers).
- The subject has refused to provide their details.
- It is reasonable suspected that the subject has provided false details.

The Grounds for use of OIFR; the subject is suspected to be:

- Wanted by the courts.
- Of having committed a criminal offence or is unlawfully at large with further police action required.
- Subject of bail conditions, court order or other restriction that would be breached if they were at the location at the time.
- Missing persons deemed increased risk.
- Presenting a risk of significant harm to themselves or others.
- Subject is deceased or it has been confirmed that they are deceased.

The aim of the FRT project is to provide the following benefits to law enforcement:

- Improved public safety.
- Facial recognition makes it easier to track a wide variety of offenders as the technology is capable of analysing CCTV camera networks.
- The technology is not limited to tracking down criminals. For instance, it could also make it easier to find people, many of whom are vulnerable.
- Facial recognition could make security checkpoints at airports less intrusive to passengers.
- Enabling the singling out suspects among crowds, FRT could help decrease stops and searches on law-abiding citizens and reduce public outrage over unjustified stops and searches.
- The knowledge of the presence of a facial recognition system serves as a deterrence, especially to lower level crime.
- As a dynamic resource to be deployed to Critical Incident Management.
- Supporting the timely apprehension of wanted persons or identification of victims/injured parties. This reduces the risk to individuals but also the impact on victims, their families and witnesses.
- As a pre-planned resource for large public gatherings, it may deter public order situations and criminality from ensuing and increase safety of the event along with providing reassurance to persons present by a visible pro-active policing tool.
- Enable early apprehension of subjects who are wanted for outstanding offences, currently wanted on warrant, and discourage/prevent subjects committing further offences.
- Allowing investigations to be conducted with the least intrusion possible by enhancing locations of wanted and missing persons without the need for circulation on other wide scale and international platforms such as social media.
- Increase ability to expeditiously locate and safeguard those who pose a risk to themselves and others.
- LFR will assist officers where traditional policing methods can struggle to yield results. An individual officer cannot possibly remember all the faces of wanted persons on a Watchlist due to its size. Although the final determination will be made by the engagement team the system helps to reduce Human error by allowing an unbiased identification.
- Reduce the requirement for repeated and often confrontational arrest enquiries at residential addresses. As it is also less resource intensive the Deployment of LFR also allows more efficient resourcing of force priorities.
- Increases effectiveness to assist in locating wanted nominals from outside of the force area or travelling OCG's. This improves collaboration between forces and improves the effectivity of designated operations where the involved persons operate a transient lifestyle or target specific events.
- Reduces the requirement for officers to review video feeds post capture to identify offenders.
- Fast and Non-Invasive Identity Verification
- Fast processing which doesn't require contact with users, particularly prudent in light of the Covid pandemic.
- Modernises and up-skills the workforce.

By combining cutting edge technology and a skilled workforce, offenders can be brought justice more quickly. The technology has an important role to play in helping to protect the most vulnerable in communities. It

allows for the faster identification of offenders which improves the quality of investigations. This results in victims seeing the perpetrators of crime brought to justice in a timelier fashion which frees up resources to allow further understanding and increased responding to the needs of the community.

FRT can also help in the fight against cybercrime as it is a substitute for passwords to access computers and apps as there are no passwords that hackers could compromise. Even if hackers stole a photo database, it would be of little use, as "liveness detection," prevent using them for impersonation purposes.

2. Guidance, procedure or projects rarely operate in isolation and an impact in one area may have knock on effects. Are there any associated Force Aims, Guidance, Procedure or Projects linked to this one?

Force Aims

The use of FRT will increase efficiency and effectiveness as well as achieve the Force aims and objectives laid out in the South Wales Police and Crime Plan and Chief Constable's Delivery Plan. Namely:

- Reduction and prevention of crime to keep people safe
- Work to protect the most vulnerable in our communities
- Make our wider contribution to policing successfully policing major events.
- Meet the needs of victims and prevent re-offending
- Spend your money wisely and provide the best possible policing in your community
- Understanding and responding to our people by developing our organisation and people
- Preventing harm from serious and organised crime
- Early intervention and prevention

The Policing Vision 2025

The core digital objectives of the Policing Vision are to make it easier and more consistent for the public to make digital contact and to improve our use of digital intelligence and evidence and ensure we can transfer all material in a digital format to the Criminal Justice System.

The NPCC's Digital Foundation Capabilities Plan breaks down the Policing Vision's requirement into key deliverables, of which FRT and the use of the OIFR application will support:

- Technically converged biometrics database (instead of the current siloed capabilities) which provides enhanced biometrics capabilities.
- Mobile digitally enabled policing, with officers and staff able to provide increased productivity due to simplification of policing/ business processes that are supported by technology. Therefore, providing an improved service to the public through efficiency savings.

Documentation: Guidance & Procedures, SOPS, Legal Requirements

SWP has produced and developed Facial Recognition related documents including standard operating procedures and impact assessments. These should be considered living documents which will develop over time to encapsulate lessons learned, amendments to law and changes to the policing landscape.

Standard Operating Procedures (SOPS)

- OIFR Standard Operating Procedure (SOP) outlines the procedures for use of OIFR.
- LFR Standard Operating Procedure (SOP) - outlines procedures to be adopted when planning for and using Live Facial Recognition (LFR) technology in support of policing operations. Compliance with the SOP will ensure a consistent corporate response to the use of this policing tool.
 - Confirms the authorisation regime for LFR. It also covers the generation and management of the reference image database to be used in LFR Deployments.
 - Gives instruction to the operator and engagement teams on the action to be taken when an alert is received and how those alerts are communicated.
 - Ensures clear guidance is given in relation to post Deployment data management and the recording and publishing of that data.
- Retrospective Facial Recognition SOP - The Retrospective image SOP provides guidance on when the technology is implemented, what is deemed a useable image and also the disclosure of the use of

the technology to the courts. There is also a user guide advising how images are to be saved to police systems and tasked to the identification team to be processed.

Legal

- Data Protection Impact Assessment (DPIA) - The DPIA identifies and minimises the data protection risks of using the OIFR technology and in particular the specified types of processing.
- General Data Protection Legislation (GDPR) - produced in accordance with SWP obligations under GDPR. It should be read alongside the SWP Record of Processing Activities (maintained in accordance with [Article 30 GDPR](#)), and the SWP [Personal Information Charter](#).
- LFR / RFR / OIFR Data Protection Impact Assessment (DPIA)
- LFR / RFR / OIFR Policy on Sensitive Processing under Part 2 Data Protection Act 2018 and GDPR
- LFR / RFR / OIFR policy on the processing of data according to under part 3 of the data protection act 2018
- LFR / RFR / OIFR Legal Mandate

Guidance & Procedures include:

- SWP Data Protection Guidance & Procedures
- SWP Retention Guidance & Procedure
- SWP Missing Persons Policy
- SWP Body Worn Video Guidance & Procedure
- SWP Sudden & Unexplained Death Guidance & Procedure
- NPL Equitability study (April 2023)

Cognisance of:

- SWP Business Information Reporting and Warrant management System

Projects

This project directly links to the following SWP programmes:

- Facial Recognition & Biometrics Programme
- Digital Evidence Management Programme

Governance

The Joint Digital Services Division oversee the day-to-day governance of the FRT project. The Digital Services Command Team have responsibility for the timely progression of the programme's various work streams.

SWP FRT website:

The Force has a dedicated website [Facial Recognition Technology | South Wales Police \(south-wales.police.uk\)](#) which is a public-facing website sharing information about FRT and SWP use of it. The site supplies information such as FAQ's, truths about the system, accuracy information and who they are seeking with this technology. The website also lists future locations where the technology is due to be deployed. To aid transparency it also links to statistical pages where the public can examine the results of each Deployment.

3. What factors, if any, could contribute or detract from the intended outcomes? (i.e. are there any barriers)

The level of public interest in the use of the technology is not underestimated and is often fuelled by mainstream media. The use of FRT brings monitoring to new levels enabling the automated and indiscriminate live surveillance of people as they go about their daily business.

Barriers

FRT has raised concerns amongst civil libertarian groups who have called the Deployment of the technology “dangerously authoritarian”. This culminated in May 2019 when the pressure group Liberty brought a judicial review challenging the legality of SWP’s FRT Live Facial Recognition programme.

The global negativity surrounding public perception on the use of FRT include:

- Threatens individual and societal privacy - The threat to individual privacy is a significant downside of FRT. People don’t like having their faces recorded and stored in a database for unknown future use.
- Imposes on personal freedom - Being recorded and scanned by FRT can make people feel like they’re always being watched and judged for their behaviour. Plus, police can use FRT to run everyone in their database through a virtual criminal line up, which is like treating you as a criminal suspect without probable cause.
- Violates personal rights - Countries with limited personal freedoms, such as China, UAE, North Korea, Iran and Iraq, commonly use FRT to spy on citizens and arrest those deemed troublemakers.
- Creates data vulnerabilities - There is also concern about the storage of FRT data, as these databases have the potential to be breached.
- Technology is imperfect - FRT is not perfect. For example, it’s less effective at identifying women and people of colour than white males. The technology depends upon algorithms to make facial matches. Those algorithms are more robust for white men than other groups because the databases contain more data on white men than women and people of colour. This creates unintentional biases in the algorithms.
- Innocent people could be charged - There are inherent dangers in false positives. FRT could improperly identify someone as a criminal.
- This issue is exasperated when you add that the technology struggles with people of colour, which increases the potential for racial profiling accusations.
- Technology can be fooled - Other factors can affect the technology’s ability to recognise people’s faces, including camera angles, lighting levels and image or video quality. People wearing disguises or slightly changing their appearance can throw off FRT too.

A summary of publications which investigate public perception and concerns:

The Ada Lovelace Institute

The Ada Lovelace Institute published a report “[Beyond face value: public attitudes to facial recognition technology](#)” in September 2019. The report summarises the main messages from a survey of public attitudes to the use of FRT in the UK.

This survey shows that the British public are prepared to accept use of facial recognition technology in some instances, when there is a clear public benefit and where appropriate safeguards are put in place, but they also want the government to impose restrictions on its use.

Most people think FRT should be permitted for use by police in criminal investigations (70%).

National Press articles relating to LFR:

The Guardian:

<https://www.theguardian.com/technology/2019/may/29/facial-recognition-must-not-introduce-gender-or-racial-bias-police-told>

An article in which the London Policing Ethics Panel are quoted as stating “important ethical issues need to be addressed” in the use of the controversial FRT and did not justify using it at all.

New York Times

<https://www.nytimes.com/2019/12/19/technology/facial-recognition-bias.html>

International reporting that most algorithms tested have racial and gender bias, and people will be arrested as a result of misidentification. Facial recognition systems used globally are racist and sexist and could lead

to false arrests, according to a major US government study. The study analysed the performance of 189 algorithms provided by 99 developers of facial recognition technology around the world.

Other publications exploring FRT:

Interim report of the Biometrics and Forensics Ethics Group Facial Recognition Working Group, February 2019
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/781745/Facial_Recognition_Briefing_BFEG_February_2019.pdf

This briefing document outlines some of the ethical issues raised by the use of live (real-time) FRT for policing purposes. It focuses on the use of this technology in relatively 'controlled' environments; namely public spaces where people are gathered and relatively static (e.g. concert venues, sports stadiums, public rallies) and those with clearly defined entry and exit points or where people are 'channelled' past the cameras (e.g. [approaches to] railway stations, airports, shopping centres, political marches or demonstrations).

ICO opinion on the use of live FRT by law enforcement in public places
<https://ico.org.uk/media/about-the-ico/documents/2616184/live-frt-law-enforcement-opinion-20191031.pdf>

This report covers a number of points including:

The public expect the highest standards of compliance by the police and other law enforcement authorities when processing sensitive data on a large scale and which occurs when using LFR in public areas. The Information Commissioner views such high standards, reflected in this Opinion, as critical to maintaining public confidence in the technology and what it is seeking to achieve.

In the Information Commissioner's view, the case for effectiveness should not be based on the ratio of matches compared to false matches, although that may be an indicator of effectiveness. Nor should effectiveness be based simply on the number of arrests enabled by LFR. Measures of effectiveness should include demonstrable benefit to the public. A possible example is where LFR results in the location and conviction of a serious offender leading to a reduction in that individual's ability to commit serious crime.

From the perspective of transparency, the Information Commissioner believes that law enforcement agencies should ensure that sufficient information is made available to the public so that the public, and directly affected individuals, are able to understand how the law enforcement agency's measures of effectiveness inform the evolution and duration of pilot phases, as well as operational Deployments.

In order to mitigate the risk of bias within the technology against gender or ethnic groups, agencies considering Deployment of LFR should:

- complete an Equality Impact Assessment with consideration to the Equality Act 2010; and
- regularly review this against legal developments (as the High Court noted in *Bridges v SWP*).

Home Office Biometrics Strategy

The Home Office Biometrics Strategy sets out the overarching framework within which organisations in the Home Office sector will consider and make decisions on the use and development of biometric technology. There are robust governance and oversight arrangements for well-established biometrics and the Home Office is committed to developing this framework to ensure the effective governance of new biometric technologies.

- The use of biometric data is fundamental to the proper functioning of our immigration system, to law enforcement and to those responsible for preventing terrorism.
- As the technology develops this creates opportunities to not only improve safety and security, but to also deliver new and modern services.
- Biometrics have long provided a critical role across the Home Office sector from traditional policing forensics, immigration services to national security. The most commonly used forms of biometric are Deoxyribonucleic acid (DNA), fingerprints and face. In 2017, biometrics helped to facilitate the movement of over 46.2 million people through the ePassport Gates at our borders, supported 2.7 million visa applications and in 2016-17 helped to link over 32,000 known individuals to crimes including over 700 rapes.

- Biometrics – the recognition of people based on measurement and analysis of their biological characteristics or behavioural data – is increasingly prevalent in everyday life. It is used extensively by businesses to provide new and more efficient services, from unlocking mobile phones to secure banking.
- The face is the primary means used to identify people in many settings. Since the advent of photography, it has been extensively used by police officers and witnesses to identify suspects, or to verify people in immigration and nationality systems. Digital facial images are now used extensively when issuing documents that set out the holders' status, in the verification of identity and in the control of migration, often alongside fingerprints. The police capture facial images under powers set out in the Police and Criminal Evidence Act (PACE) 1984 and these are used in the investigation, detection and prevention of crime and terrorist activities as well as safeguarding.

FRA European union agency for fundamental rights – FRT: Fundamental rights considerations in the context of law enforcement

https://fra.europa.eu/sites/default/files/fra_uploads/fra-2019-facial-recognition-technology-focus-paper.pdf

This focus paper explores fundamental rights implications that should be taken into account when developing, deploying, using and regulating facial recognition technologies. It draws on recent analyses and data and evidence from interviews conducted with experts and representatives of national authorities who are testing FRTs.

- The paper forms part of FRA's larger research project on artificial intelligence, big data and fundamental rights. Of note from this paper. The high level of attention given to facial recognition technology in the recent past stems from strong accuracy gains achieved since 2014.
- At the same time, FRT can offer more timely protection – for example by helping to find missing children – and can help to detect fraud and identify theft.
- In relation to automated decision making and right to human review - Article 22 of the GDPR and Article 11 of the Law Enforcement Directive generally forbid automated decision making. Automated decision making is defined as a "decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her."
- In addition, as the child grows and time passes, the accuracy of a biometric match diminishes. The risk of a wrong match increases when facial images recorded at a young age are compared more than five years after they were collected. Present technologies for facial recognition guarantee a reliable match when the child was at least six years old when the biometric facial image was captured, and the match happened within a time frame of five years. In general, research indicates that the accuracy of FRT is significantly lower for children younger than 13 years.
- FRT algorithms never provide a definitive result. In the MPS, LFR is used to Alert officers of a possible match between a person passing the LFR system and a person on the reference image database rather than definitively identifying those passing the LFR system. In the context of law enforcement, there is thus a certain margin of error leading to people being wrongly flagged. When deploying the technology, the risks of wrongly flagging people must be kept to a minimum. Everyone who is stopped as a result of the technology must be treated in a dignified manner.
- A fundamental rights impact assessment is an essential tool to ensure a fundamental rights compliant application of facial recognition technologies, whatever the context in which it is employed. Such an assessment needs to evaluate all affected rights, including those listed in this paper, in a comprehensive manner. To enable them to carry out such assessment, public authorities need to obtain all necessary information from the industry which is required to assess the technology's impact on fundamental rights. Trade secrets or confidentiality considerations should not hinder this effort.

NIST Face Recognition Vendor Test (FRVT) Part 3: Demographic Effects

<https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8280.pdf>

The National Institute of Standards and Technology (NIST) was founded in 1901 and is now part of the U.S. Department of Commerce. NIST is one of the nation's oldest physical science laboratories. Today, NIST measurements support the smallest of technologies to the largest and most complex of human-made creations—from nanoscale devices so tiny that tens of thousands can fit on the end of a single human hair up

to earthquake-resistant skyscrapers and global communication networks.

This is the third in a series of reports on ongoing face recognition vendor tests (FRVT) executed by NIST). As part of the Aims and Scope of the report NIST has conducted tests to quantify demographic differences in contemporary face recognition algorithms.

The report concludes:

Identification Algorithms: The presence of an enrolment database affords one-to-many algorithms are source for mitigation of demographic effects that purely one-to-one verification systems do not have. We note that demographic differentials present in one-to-one verification algorithms are usually, but not always, present in one-to-many search algorithms. One important exception is that some developers supplied identification algorithms for which false positive differentials are undetectable. Among those is Idemia, who publicly described how this was achieved. A further algorithm, NEC-3, is on many measures, the most accurate we have evaluated. Other developers producing algorithms with stable false positive rates are Aware, Toshiba, Tevian and Real Networks. These algorithms also give false positive identification rates that are approximately independent of the size of enrolment database.

The Department of Homeland Security (DHS) Biometric Technology

DHS Science and Technology Directorate host Biometric Technology Rallies which bring together subject matter experts, technology vendors and volunteers to test new and emerging biometric technology systems. Previous test results demonstrate that while some biometric technologies are improving, many tested technologies fall short in operational settings. The rallies challenge industry to develop biometric systems to meet the requirements of high-throughput operations and employ controlled testing of candidate technologies in relevant scenarios.

Due to the COVID-19 pandemic, DHS priorities for the 2020 Rally focused on evaluating the ability of systems to reliably collect and/or match images of individuals, including individuals wearing face masks. The intent to improve the ability to recognise people without requiring travellers to remove protective equipment, reducing risk for both the public and frontline DHS personnel -[2020 Results – Maryland Test Facility \(mdtf.org\)](#)

Judicial Review

In May 2019 the pressure group Liberty brought a judicial review challenging the legality of SWP use of FRT Live Facial Recognition programme. The case concerned SWP use of Automated Facial Technology (AFR) in two Deployments where SWP allegedly recorded an image of the Claimant. Once on 21st December 2017 at Queen Street Cardiff and another at the Defence Procurement, Research, Technology and Exportability Exhibition (“the Defence Exhibition”) on 27th March 2018.

On 4th September 2019 in the Administrative Court Bridges (Haddon-Cave LJ and Swift J) handed down the judgment that ‘The Court’ held that it was lawful for the police to use AFR.

The Claimant contested that the use of AFR was unlawful as under s149(1) Equality Act 2010 that SWP failed to take account of the fact that the use of AFR would result in a disproportionately higher rate of false-positive matches for women and minority ethnic groups. Therefore, the use of the technology would indirectly discriminate. Accordingly, SWP failed to take into account the relevant considerations from s149(1)(a)-(c) of the Act.

The claim relied upon s149(1) of the Equality Act 2010 which prescribes that public authorities are required to put in place systems to eliminate discrimination, advance equality of opportunity and foster good relations between those who have protected characteristics.

In adherence to the requirements, SWP had prepared an Equality Impact Assessment prior to any LFR Deployment of the technology and prior to the two Deployments concerned in Administrative Court Bridges, showing SWP had considered our obligations at an early stage. This was criticised by the Claimant on the basis

that it failed to consider that the AFR technology may produce results which were indirectly discriminatory due to results that state it is more likely to falsely match female and minority ethnic faces.

The Court noted that there was no firm evidence that AFR produces indirectly discriminatory results. The Court placed reliance on the safeguard of having an officer make their own determination of any match the system provides. Accordingly, the Claimants arguments as to the equality ground failed.

Therefore, the Claimant's claim for judicial review was dismissed on all grounds.

In the Court of Appeal these are the points which were detailed which policing needs to follow to demonstrate due regard under the PSED:

- The PSED must be fulfilled before and at the time when a particular policy is being considered.
- The duty must be exercised in substance, with rigour, and with an open mind.
- The duty is non-delegable.
- The duty is a continuing one.
- If the relevant material is not available, there will be a duty to acquire it and this will frequently mean that some further consultation with appropriate groups is required.
- Provided the court is satisfied that there has been a rigorous consideration of the duty, so that there is a proper appreciation of the potential impact of the decision on equality objectives and the desirability of promoting them, then it is for the decision-maker to decide how much weight should be given to the various factors informing the decision.

Although the Court of Appeal Bridges focused on LFR (also then known locally as AFR Locate) it would be entirely reasonable, which is supported by legal advice provided to SWP and the Metropolitan Police, that the PSED requirements viewed through the prism of the Bridges judgment will apply to other use cases of the technology, to include Retrospective Facial Recognition and the Operator Initiated Facial Recognition (OIFR).

Public Sector legal responsibilities - Equality Act 2010

It is an important objective of all projects within SWP including those under the Facial Recognition umbrella to be compliant with Public Sector Equality Duty 2010 (PSED).

The Equality Act 2010 details the requirement of the PSED and sets out the terms in section 149(1) as follows:

'A public authority must, in exercise of its functions, have due regard to the need to –

- Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act.
- Advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it.
- Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

National Physical Laboratory: Facial Recognition Technology in Law Enforcement Equitability Study 2023

Referred to as the NPL Equitability Study, this research was undertaken by the National Physical Laboratory having been commissioned by the Metropolitan Police and South Wales Police utilising STAR Funding. The purpose of this testing was to determine if there was any evidence of bias affecting the demographic sub-groups identified as being of particular concern of bias in the algorithm used by South Wales Police.

The study further sought to provide operational guidance to Police in the use of Facial Recognition in a manner that promotes equitability across all demographic sub-groups and produces the best possible true positive identification rate for Law Enforcement purposes.

4. Identify individuals and organisation (internally and externally) that are likely to have an interest in, or be affected by the Guidance, Procedure or Project:

External

- Surveillance Camera Commissioner (SCC) - The role of the SCC is to encourage compliance with the surveillance camera code of practice. Providing advice on the effective, appropriate, proportionate and transparent use of surveillance camera systems, reviewing how the code is working and if necessary, add others to the list of authorities who must have due regard to the code.

In November 2020 SCC published an interim report [Facing the Camera](#) which has been prepared to assist in the considerations which are to be applied by police forces who are operating or intending to operate overt surveillance camera systems in public places in England and Wales together with FRT to locate persons who are on a reference image database.

- The Biometrics Commissioner ¹– The Biometrics Commissioner is independent of government. His role is to keep under review the retention and use by the police of DNA samples, DNA profiles and fingerprints. The post of the Commissioner for the Retention and Use of Biometric Material ('the Biometrics Commissioner') was established by the Protection of Freedoms Act 2012. The statute introduced a new regime to govern the retention and use by the police of DNA samples, profiles and fingerprints.
- Prior to the changeover of Commissioners the standing Biometrics Commissioner produced an interim report detailing events that occurred whilst they remained in place "[Commissioner for the retention and use of biometric material - Interim Report December 2020](#)".
- Cardiff University Police Science Institute – The Universities' Police Science Institute (UPSI), which is part of Cardiff University's Crime and Security Research Institute (CSRI), was established in 2007 in partnership with SWP to develop the research evidence base for the art, craft and science of policing.

UPSI undertook the "[Evaluating the Use of Automated Facial Recognition Technology in Major Policing Operations](#)" study.

- National Police Chief Council Facial Recognition Technology and Video and Voice Identification Systems (FRT and VVIS Board). The FRT and VVIS Board oversees the police use of FRT and reports to the NPCC National Forensics Portfolio and the National Biometric Strategy Board.
- Information Commissioners Officer/ ICO - The UK's independent authority set up to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals. The ICO have been consulted on an ongoing basis regarding both the legal and ethnic issues concerning information management that the use of this technology has raised.
- National Police Chiefs Council - The NPCC brings police forces in the UK together to help policing coordinate operations, reform, improve and provide value for money. The NPCC have been involved in discussion and advice over the development of the project in its phases and the use of custody images.
- The College of Policing (COP) - The College of Policing was established in 2012 as the professional body for everyone who works for the police service in England and Wales. The purpose of the College is to provide those working in policing with the skills and knowledge necessary to prevent crime, protect the public, and secure public trust.

The college have been engaged in discussions regarding the Deployment of an LFR and Approved Professional Practice.

¹ The Biometrics Commissioner provides independence oversight of FRT and has no legal standing.

- Association of Police and Crime Commissioners – PCC Martyn Underhill (Dorset) is the national lead for forensics and how the forensic service can adapt to meet the needs of 21st century policing in the UK. He leads on the examination of how the service can be modernised, become more efficient and cost effective, and how innovative uses of technology can be better shared between forces.
- The Home Office Biometric and Forensic Ethics Group (BFEG) – an advisory, non-departmental public body sponsored by the Home Office that has a remit to focus on the ethical aspects of technologies that produce biometric data and identifiers.
- Her Majesty’s Inspectorate of Constabulary and Fire & Rescue Service (HMICFRS) - inspect, monitor and report on the efficiency and effectiveness of the police and FRSs with the aim of encouraging improvement.

Internal

- SWP Gender Equality Network (GEN) - All female Police officers and police staff are automatic members of the GEN. The GEN is a support network working to provide a positive working environment for female members of staff and to raise the profile of female staff within SWP.
- Lesbian, Gay, Bisexual and Transgender Network (LGBT) - The LGBT Network is a staff association for all employees of SWP. The aim of the network is to champion equality, offer advice, assist in policy development and promote an inclusive community for gay, lesbian, bisexual and transgender individuals.
- South Wales Black Police Association (SWBPA) - The SWBPA was formed in 1999 and aims to make South Wales a safer and more peaceful place, where the public, especially those who are young, vulnerable or from minority ethnic communities, have a high degree of confidence in their police.
- SWP Commissioners office - Provide support and expertise across number of areas including business administration, policy development, planning and finance. Working with the Force and its partners, they are focussed on delivering the priorities within the joint Police & Crime Reduction Plan and their approach is centred on early intervention and prompt, positive action.
- SWP Federation - The Police Federation of England and Wales is the staff association that represents all 140,000 police officers up to and including the rank of Chief Inspector. They have a statutory obligation to ensure that the views of their members are accurately relayed to government, opinion formers and key stakeholders.
- Disabled Police Association - The DPA exists to provide strategic engagement with employers and key stakeholders in order to ensure the fair treatment of disabled, injured and ill officers and staff. They aim to support the police service to deliver a fair and equitable service to all sections of the community, and in particular to improve the relationship between the police service and disabled people in society.
- Joint Independent Ethics Committee - The Joint Independent Ethics Committee provides advice, support and assistance concerning ethical challenges arising from operational, administrative or organisational matters facing SWP.

Part 2: Impact on Protected Characteristics

Policy/Action:			
Equality Groups	Positive	Adverse	Neutral
Age		X	
Disability		X	
Gender Reassignment		X	
Marriage/Civil Partnership			X
Pregnancy and Maternity			X
Race		X	
Religion or belief		X	
Sex Orientation			X
Sex		X	
Welsh			X

Describe the identified adverse impact			
<i>Please provide details:</i>			
	Impact	Adverse Impact	Describe the identified adverse impact
Age	Yes	Yes	<p>Facial images uploaded are sourced whether from custody records or from family and friends of persons reported as missing. The reference image database, as a consequence, may have images of subjects that were taken a number of years ago.</p> <p>The age of criminal responsibility in the UK is 10 years old. Image capture via Custody Imaging on which FRT technology is reliant, is dependent on the age, date and time at which the custody image was taken. In addition, the European Union's Agency for Fundamental Rights 'Facial Recognition Technology Fundamental Rights Considerations in the Context of Law Enforcement Report 2019' highlights that as a child grows and time passes, the accuracy of a biometric match can diminish. The risk of a failure to match increases when facial images recorded at a young age are compared more than five years after they were collected. The report further indicates that the accuracy of FRT is in general significantly lower for children younger than 13 years old. They associate this to "rapid growth and change in facial appearance".</p>
Disability	Yes	Yes	<p>People can undergo facial change for a number of reasons. They may suffer facial disfigurements through trauma or a medical intervention or their face may have reconstructive surgery which would result in a significant change to their facial features. Genetic</p>

NOT PROTECTIVELY MARKED
OFFICIAL SWYDDOGOL

			conditions such as neurofibromatosis also cause progressive facial change. As a consequence, the images that SWP hold may not accurately reflect their present facial appearance.
Gender reassignment	Yes	Yes	<p>The FRT probe image is based on the mapping of key facial indicators when comparing a reference image database image for an individual. Therefore, the functionality, accuracy and performance of FRT may be less effective if changes to facial appearance have occurred between the time the reference image database image was taken, and the time a comparison is made.</p> <p>This may impact persons who are transitioning from one legal gender to another if gender presentation differs from the time the comparator image was taken. It may also affect trans, non-binary and gender- fluid people who adopt to flex between gender presentations. Reports suggest that facial contouring through the use of cosmetic make-up application may impact on FRT system's performance.</p>
Marriage or civil partnership	No	No	There is no anticipated differential impact on the basis of marriage/civil partnership status.
Pregnancy	No	No	There is no anticipated differential impact on the basis of pregnancy status.
Racial groups	Yes	Yes	<p>SWP is a diverse multi-cultural area which incorporates both rural and metropolitan areas. It is therefore important to ensure that the technology is not seen to cause division between persons of different race/ethnicity.</p> <p>FRT is based on the mapping of key facial indicators. They are also dependant on the ability of the algorithm to determine the key facial indicators within an image. This can be impacted by environmental factors such as ambient light and shadows factors. This may also be impacted by the depth of skin pigmentation and the use of contouring make up.</p> <p>To date ethnicity biases have received considerable attention, particularly from academics and government bodies. Relevant studies include Klare et al (2012), NIST (2018) and Buolamwini and Gebru (2018). The findings from Buolamwini and Gebru's study in particular were widely reported, as they found algorithms were particularly biased in terms of gender and ethnicity: performance was best for men and white individuals, and poor for women and black individuals.</p>
Religious beliefs or non-beliefs	Yes	Yes	<p>The wearing of religious headwear or coverings and the growing of facial hair may have an impact on the effectiveness of FRT. In addition, certain cultures or sexes within a religion i.e. Amish, refuse to allow themselves to be photographed. Sensitivity therefore needs to be taken with cross-community dialogue to ensure the Deployment is both necessary and proportionate.</p> <p>Respect for Diversity Awareness training is embedded into SWP training program.</p>
Sex	Yes	Yes	To date, gender and ethnicity (and age) biases have received considerable attention, particularly from academics and government bodies. Relevant studies include Klare et al (2012), NIST (2018) and Buolamwini and Gebru (2018). The findings from

			<p>Buolamwini and Gebru's study in particular were widely reported, as they found algorithms were particularly biased in terms of gender and ethnicity: performance was best for men and white individuals, and poor for women and black individuals. Showing an intersectional effect, performance was worst for black women. In addition to finding similar biases, Klare et al also identified age as a factor determining algorithmic performance, with findings indicating poorest performance for people aged 18-30 (2012).</p> <p>Social observation indicates women change their appearance more frequently and significantly than men which may impact the performance of LFR. Reports suggest that facial contouring through the use of cosmetic make-up application may impact on the LFR system's performance.</p> <p>The Metropolitan Police Service have conducted small trials which also suggest that the accuracy of FRT is lesser for females than males. SWP are currently utilising NEC's M30 algorithm which at present is deemed to be the most accurate algorithm available from the supplier.</p>
Sexual orientation	No	No	There is no anticipated differential impact on the basis of sexual orientation.
Welsh language	No	No	<p>There is no anticipated differential impact on the basis of Welsh language.</p> <p>SWP produce their privacy notice both in the English and Welsh language. However, SWP has a diverse community with many people coming from countries where English or Welsh is not widely used. Therefore, our communications strategies around FRT Deployments need to reach out to these diverse groups in a meaningful way, using social media to inform those whose first language is not English or Welsh.</p>

How do you plan on addressing any identified adverse impact

Please provide details:

A diverse impact has been identified on Racial Group, Gender and Religious (or non-religious) Group.

Officer Initiated Facial Recognition (OIFR) Public Trial

Between December 2021 and March 2022, South Wales Police ran a pilot test of OIFR. A number of Officers from across SWP were given access to an app providing facial recognition capabilities on their SWP issued mobile data devices.

During the trial period, OIFR was used on 42 occasions on 35 individuals. It was necessary to utilise the OIFR app on some individuals more than once in order to successfully capture their image for comparison. 21 of the 42 uses of OIFR resulted in a positive match and 21 resulted in no match. During the trial, 11 persons were arrested following OIFR being utilised, 4 persons were reported by way of summons and 5 persons were subject of safeguarding interventions.

The intention is not for OIFR to replace traditional means of identification. For example, through conversation with the subject who then provides their name which is checked against police indexes to confirm identify. Wherever possible, it must only be used after an interaction has occurred between the officer and that subject and it has not been possible to identify the subject by usual police means such as that described.

The OIFR app will be connected to the forces use of force and stop search scrutiny by an IAG currently in place. This will ensure transparency and learning outcomes from any use.

Equitability Testing – third Party

SWP has carefully considered issues regarding bias and algorithmic injustice. When considering the algorithm and software used for LFR, there was no observed disproportionality across any particular ethnic group with regards to the generation of false alerts.

SWP are currently using the M40 algorithm for use with FRT further to analysis of the NEC algorithm findings of The National Institute of Standards and Technology (NIST) with regards the NEC_4 algorithm; with a third party being sourced to undertake a Demographic Differential Evaluation covering age, ethnicity and gender.

The research has been undertaken by the National Physics Laboratory (published April 2023) entitled '*Facial Recognition Technology in Law Enforcement: Equitability Study*'. This research is referred to as the NPL Equitability Study.

The NPL Equitability Study is available via the link:

[ftr-equitability-study_mar2023.pdf \(science.police.uk\)](#)

SWP considered it reasonable to define the scope to focus only on age, ethnicity and gender and not all the adversely impacted protected characteristics because it would be virtually impossible to have a proportion of representatives from, for example, people with facial disfigurement across different ethnic backgrounds, age and gender.

The research reviewed and considered:

To respond to the uncertainty around potential biases in the FRT algorithm used by SWP, the evaluation has been designed to:

- Robustly and independently test the NEC M40 algorithm by conducting a series of experimental research 'trials' for each of the different operational applications in which it utilised by SWP.
- Assess the outcomes of the trials, including what, if any, differentials exist and under which operational conditions.
- Establish an evidence base specific to the NEC 'M40' algorithm as used by SWP (henceforth 'the algorithm').

In doing so, the evaluation will answer five key research questions about the algorithm:

1. Does the algorithm display an ethnicity differential in reading and matching faces? If so, how?
2. Does the algorithm display a gender differential in reading and matching faces? If so, how?
3. Does the algorithm display an age differential in reading and matching faces? If so, how?
4. Do ethnicity, gender and age interact to create and/or worsen any inherent biases within the algorithm?
5. Are any or all of the differentials identified more significant when the algorithm is used in specific operational applications?

The findings of this study can be found at:

[ftr-equitability-study_mar2023.pdf \(science.police.uk\)](#)

The responses to be above questions are:

1. Does the algorithm display an ethnicity differential in reading and matching faces? If so, How?

LFR: the NPL findings show that with Threshold settings of 0.6 and above, the false positive identification rate and the true positive identification rate between the ethnicities were equitable. Below 0.6, equitability will depend on settings of the operational Deployment, including size and composition of the watchlist, and the number of crowd subjects passing through the zone of recognition during the Deployment.

The recommendation of the NPL is that 0.6 be the minimum Threshold utilised in order to minimise false positive alerts and any adverse impact on equitability

RFR and OIFR: For OIFR and RFR, on all occasions whereby this was tested, the algorithm correctly identified the subject at position 1 on all occasions. This gives a true positive identification rate of 100% and shows no identifiable bias between ethnicities.

2. Does the algorithm display a gender differential in reading and matching faces? If so, how?

LFR: At a Threshold setting of 0.6 and above, the false positive identification rate and true positive identification rate were positive between the genders tested.

Below 0.6, equitability will depend on settings of the operational Deployment, including size and composition of the watchlist, and the number of crowd subjects passing through the zone of recognition during the Deployment.

The recommendation of the NPL is that 0.6 be the minimum Threshold utilised in order to minimise false positive alerts and any adverse impact on equitability

RFR and OIFR: For OIFR and RFR, on all occasions whereby this was tested, the algorithm correctly identified the subject at position 1 on all occasions. This gives a true positive identification rate of 100% and shows no identifiable bias in gender.

3. Does the algorithm display a gender differential in reading and matching faces? If so, how?

LFR: At a Threshold setting of 0.6 and above, the false positive identification rate was equitable between all age groups tested. The true positive identification rate for persons under 20 was determined to be lower than the other age groups however it is believed that environmental factors may have also influenced this, including crowd density and height of the subjects being sought for identification.

The recommendation here is that at a Threshold of 0.6, a small number of false positive identifications were created however the balance was not statistically significant. Authorising Officers should consider the potential crowd density and number of persons included in the watchlist below the age of 20 when considering the agreed minimum Threshold to maximise the true positive identification rates, whilst considering crowd density and minimising false positive identifications amongst all demographic groups.

RFR and OIFR: For OIFR and RFR, on all occasions whereby this was tested, the algorithm correctly identified the subject at position 1 on all occasions. This gives a true positive identification rate of 100% and shows no identifiable bias between age groups.

4. Do ethnicity, gender and age interact to create and/ or worsen any inherent biases in the algorithm?

LFR: At a Threshold setting of 0.6, the highest performing true positive identification rate was that of Asian females. The lowest performing true positive identification rate was that of Black females. When considering gender and ethnicity together across the entire test cohort, the differences were not statistically significant across any group or sub-group.

RFR and OIFR: For OIFR and RFR, on all occasions whereby this was tested, the algorithm correctly identified the subject at position 1 on all occasions. This gives a true positive identification rate of 100% and shows no identifiable bias in any demographic or sub-group.

5. Are any or all of the differentials identified more significant when the algorithm is used in specific operational applications?

In OIFR and RFR, the true positive identification rate was the same across all demographics and sub-groups, with all subjects in the test cohort coming back at position 1.

In LFR, it is recognised that the Threshold settings influence the potential for presence of bias. Notably, at a Threshold of 0.56, the number of false positive identifications created against persons from black communities was considered statistically significant. This however is not seen when the Thresholds are raised to 0.6 or above. For this reason, the recommended minimum agreed Threshold for any LFR Deployment will be set a level where equitability of the rate of false positive identification across all demographics is achieved and the rate of likelihood of a false positive alert being created is deemed to be acceptable. Any divergence from this will be supported with a specific rationale to justify why it was necessary to reduce the minimum agreed Threshold below this level.

Training

Respect for Diversity Awareness training is embedded into SWP training program which raise officer and PCSO awareness to the strict guidelines pertaining to photography in some religions.

Code of Ethics

The Code of Ethics sets and defines the exemplary standards of behaviour for everyone who works in policing. The Code of Ethics is about self-awareness, ensuring that everyone in policing feels able to always do the right thing and is confident to challenge colleagues irrespective of their rank, role or position.

Describe how a differential or adverse impact has been identified but can be justified

Please provide details:

Although the potential for an adverse impact has been identified for the technology core principles of lawful operational policing are detailed below and on balance justify the importance of the continued use of all methods of FRT.

- Protecting life and property
- Preserving order
- Preventing the commission of offences
- Bringing offenders to justice

These principles are consistent with the definition of law enforcement purposes under Part 3, section 31 DPA: 'the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, including the safeguarding against and the prevention of threats to public security'.

The legal framework which contributes to the use of OIFR is summarised below:

- Common Law
- Equalities Act 2010
- Police and Criminal Evidence Act 1984
- Human Rights Act 1998
- Data Protection Act 2018
- Freedom of Information Act 2000
- Protection of Freedoms Act 2012
- Regulation of Investigatory Powers Act 2000

Common Law

The police can, in fulfilling operational duties conduct themselves in a manner which is not contrary to law. These core principles include:

- Protecting life and property
- Preserving order
- Preventing the commission of offences
- Bringing offenders to justice

Case law - Bridges v SWP 2018 has affirmed that:

Police constables owe the public a common law duty to prevent and detect crime. That duty reflects a corresponding common law power to take steps in order to prevent and detect crime. This general power of the police includes the use, retention and disclosure of imagery of individuals for the purposes of preventing and detecting crime.

The police may make reasonable use of a photograph of an individual for the purpose of the prevention and detection of crime, the investigation of alleged offences and the apprehension of suspects or persons unlawfully at large and may do so whether or not the photograph is of any person they seek to arrest or of a suspected accomplice or of anyone else.

Police and Criminal Evidence Act 1984

The police have explicit statutory powers to acquire, retain and use such imagery under s.64A Police and Criminal Evidence Act 1984)

s.64A Photographing of suspects etc

(1) A person who is detained at a police station may be photographed

- (a) with the appropriate consent; or
- (b) if the appropriate consent is withheld or it is not practicable to obtain it, without it.

(4) A photograph taken under this section

- (a) may be used by, or disclosed to, any person for any purpose related to the prevention or detection of crime, the investigation of an offence or the conduct of a prosecution or to the enforcement of a sentence; and
- (b) after being so used or disclosed, may be retained but may not be used or disclosed except for a purpose so related.

There is potential for an adverse impact to be created in the Deployment of LFR with a Threshold below 0.6, as indicated by NPL Equitability Study findings.

SWP will use this technology in a means that provides equitability across all demographic groups.

Any divergence from this would be limited and on a basis of absolute necessity. These circumstances would be accompanied by an appropriate rationale and as soon as the necessity to continue to use a lower Threshold ceases to be justified and proportionate, the Thresholds will be amended to a level where equitability of the rate of false positive identification across all demographics is achieved and the rate of likelihood of a false positive alert being created is deemed to be acceptable.

Date of Review of Policy: 09/05/2023

The Equality Impact Assessment is now complete if:

- **NO** differential / adverse impact has been identified, or
- A differential / adverse impact has been identified but can be justified.

If the differential / adverse impact **cannot** be justified, a Full Equality Impact Assessment must be completed.

8. Is a Full Equality Impact Assessment Required?	YES	
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If yes, continue to part 3.

Part 3 – Full Equality Impact Assessment

If assistance is required to confidently complete the Full EIA, please contact the Equality Diversity and Inclusion Team.

All full EIA's will be assessed by the Equality Diversity and Inclusion Board for final authorisation.

The full EIA must be completed where the EIA Initial Screening has indicated that a Guidance, Procedure or Project has the potential for differential / adverse impact which cannot be justified on the grounds of being a necessary and proportionate means of achieving a legitimate aim.

Please Note: This is an ongoing process and needs to be considered / completed alongside the Guidance, Procedure or Project development or review.

The following questions should be considered from the perspective of all protected characteristics as identified in Part 2.

1. Research

a) What quantitative and qualitative data has been considered?

The University Police Science Institute (UPSI) based at Cardiff University were due to commence an academic evaluation in March 2020 but was initially delayed due to the Covid-19 restrictions. However, at the time of writing it is anticipated that this evaluation will not take place.

The National Physics Laboratory undertook an academic evaluation together with the Metropolitan Police commencing at the beginning of 2022. This research was completed and published in April 2023 entitled: 'Facial Recognition Technology in Law Enforcement: Equitability Study'. This is referred to as the NPL Equitability Study

The findings of this study are available at:

[ftr-equitability-study_mar2023.pdf \(science.police.uk\)](#)

SWP acknowledge that there has been legitimate debate in the media concerning potential bias around gender and ethnicity. Environmental scanning provides evidence that people are rightly concerned that FRT technology may discriminate against certain ethnic groups and also against women.

The findings of the Ada Lovelace Institute findings show that the British public are prepared to accept use of FRT in some instances, when there is a clear public benefit and where appropriate safeguards are put in place, but they also want the government to impose restrictions on its use. Most people think FRT should be permitted for use by police in criminal investigations (70%).

The National Institute of Standards and Technology (NIST) which is a physical sciences laboratory and a non-regulatory agency of the United States Department of Commerce have run open, large scale Face Recognition Vendor Tests (the NIST Tests) to assess the accuracy of facial recognition algorithms since 2000. These tests allow SWP to compare the baseline accuracy of different algorithms from different vendors. They have also allowed SWP to monitor the improvement of facial recognition accuracy over time and allow an informed decision to transition to the M30 algorithm and since then the M40 algorithm.

The below summary paper 'AFR Public Sector Equality Duty Demographic Differential'² outlines the findings of the NIST tests and the way forward for SWP.



NIST Summary Paper

SWP will work with the National Physics Laboratory to provide reassurance and aspiration of a definitive answer on this legitimate area of concern and review this EIA accordingly.

SWP OIFR internal testing

The trial was conducted during November 2021. It involved consenting members of SWP staff and warranted officers who gave their written consent for their images to be used to create a watch list and for a photograph of themselves to be taken in person via the application for comparison against the said watch list.

Prior to the start of the trial 164 persons consented via an online consent form for their images to be used. These images were obtained from staff data bases and were used to create the initial watch list. The trial comprised of two DSD officers visiting stations and HQ departments with a secure mobile phone that had the OIFR application installed. Written consent was obtained from these people also to take part in the trial. The consent form captured the subjects Personal characteristics of Gender, Ethnicity and age bracket.

Once the consent and personal characteristics data were obtained the subjects file image was added to the testing watch list and then a photograph was obtained of that person using the app for comparison. A total of 163 subjects images were obtained for comparison. As persons took part in the trial the watchlist was continually expanded, as such the final watchlist total grew to 319 persons.

Officers involved in the trial reported back that the functionality of the app worked very well. On every occasion the user was able to obtain a suitable photograph for comparison on the first attempt of trying, albeit this was whilst taking a face on image of the triallist subject and without the challenges of any face coverings.

On every occasion the image searched within app returned a match for the subject, regardless of Ethnicity, Gender, or age and ranked the subject as the number one result without exception. From this trial there was no officer perceived bias in relation to the accuracy of the app.

The breakdown of the characteristics tested are available in more detail via the FRT webpage in the documents section.

OIFR Pilot December 2021- March 2022.

On every occasion the image searched within app returned a match for the subject, regardless of Ethnicity, Gender, or age and ranked the subject as the number one result without exception. From this trial there was no officer perceived bias in relation to the accuracy of the app.

During the trial period the app was used on 42 occasions towards 35 individual subjects. There is a discrepancy between the figures because on four occasions the app was used more than once with the same subject. There were a few reasons for this namely;
One subject was wearing clothing that obstructed his face.
One subject was photographed in a very dark street at night with very little lighting.
One subject was photographed a few times as it was difficult to get a good picture as they were deceased following a fatal RTC.

² Demographic Differential – an algorithm's ability to match 2 images of the same person varies from one demographic group to another.

Gender.

- 39 photographs obtained were of Male subjects
- 3 were obtained of females.

Ethnicity.

- There were 4 uses with Arabic North African subjects.
- There were 4 uses recorded with Asian subjects (but this was one subject duplicated who was deceased at the morgue.)
- There were 4 uses recorded with Black subjects, (However two of these people are the same subject and BWV clearly shows the subject to be Asian.)
- There were 2 uses with White Southern European subjects.
- There were 25 uses with White Northern European subjects.
- There were 3 uses recorded as Ethnicity unknown. (Matched data shows 1 Asian, 1 White NE, 1 previously listed on Niche as Asian/White/Arabic NA and Unknown.)

Age.

- 10 – 17, recorded uses 6 with 3 subjects.
- 18 – 30, recorded uses 21 with 20 subjects.
- 31 – 60, recorded uses 15 with 12 subjects.

b) Have any concerns been identified through the research findings?

SWP has observed differences in the way the FRT algorithm has responded to gender and this was highlighted in the judicial review. SWP acknowledged that there were proportionally more false positive female alerts than false positive male alerts. As a consequence, and detailed above, SWP, in conjunction with National Physics Laboratory, are to be commissioned to undertake a study into gender and ethnic bias. This study will report in 2022. SWP will review its EIA in light of the findings of study.

SWP, as stated in the judicial review, have observed no bias based on ethnic origin and have openly disclosed challenges around the issue of gender, especially with females, and have provided a rationale as to why this has been observed.

These concerns have been examined in the NEC study (as above) and in line with its commitment to use the latest, accurate technology, it was recommended that SWP align to the M40 version of the NEC algorithm. The NIST Tests confirm that the accuracy of the NEC algorithm has continued to improve over time and “the most accurate algorithms produce many fewer errors, and these algorithms can therefore be expected to have smaller demographic differentials”.

Following the NPL Equitability Study, OIFR and RFR have been determined to be equitable for all demographics and sub-groups tested, with 100% true positive identification rate and 0% false positive identifications. All subjects in the test cohort were returned at position 1 when tested against these types of FRT.

In regards to LFR, concerns have been identified only if the Thresholds are reduced below 0.6. At 0.6, LFR is deemed to be equitable, with no significant statistical difference across all demographics. When dropping below this Threshold, statistically significant differences in the false positive identification with the most concern being amongst black females.

For this reason, the minimum agreed Threshold will be set at a level whereby the rate of false positive alerts is equitable across all demographic groups. This is to minimise the adverse impact and ensure equitability.

c) Have any gaps in the research/data been identified?

SWP is to commence in December 2021 a pilot of the OIFR in advance of the National Physics Laboratory evaluation; the analysis of the algorithm during the NIST Demographic Differential (DD) is lab based and only goes so far, therefore in order to ‘fill the gaps’ testing is to be undertaken in the operational environment.

SWP are currently using the M40 algorithm for use with FRT technology further to analysis of the NEC algorithm findings of The National Institute of Standards and Technology (NIST).; and will informed by the National Physics Laboratory to take a Demographic Differential Evaluation covering age, ethnicity and gender.

An evaluation covering age, ethnicity and gender is considered reasonable to define the scope and focus only on age, ethnicity and gender and not all the adversely impacted protected characteristics because it would be virtually impossible to have a proportion of representatives from, for example, people with facial disfigurement across different ethnic backgrounds, age and gender.

The DD will involve 200 test images from across the identified protected characteristic backgrounds and evaluating the response. This results of which will be made available to different groups of people as part of the consultation process with the aim of promoting good relations with the communities served.

Following on from the NPL Equitability study, consideration could be given to the impact of quality of images involved in RFR and the impact this has on true positive identification rates across demographic groups.

Consideration could also be given to standard of video feed and also the impact of video compression upon LFR to determine a recommended minimum standard for the utilisation of LFR.

d) Has the Guidance, Procedure or Project been amended as a result of the research findings, and if so how? (*Amendments must be recorded in Appendix A*)

As a result of the findings of the NPL Equitability study, the minimum agreed Threshold for LFR is to be set at a level where the false positive identification rate is equitable across all demographics and the likelihood of a false positive being created is reduced to an acceptable level.

In respect of OIFR, a Threshold setting that reduced the likelihood of high scoring non-mated comparisons occurring is recommended. This returned all subjects involved in the test cohorts in position 1 but removed the chances of high scoring non-mated comparisons impacting upon the identifications.

e) Outline any plans for further research or data collection.

Further research and data collection will be commissioned as required further to publication of the study.

2. Consultation

a) Which individuals and organisation internally and externally were consulted?
(*Equality & Diversity related responses must be recorded in Appendix A*)

External

The Covid pandemic has delayed a full consultation exercise on the use of FRT, however, a full and thorough consultation exercise is now to be scheduled both internally and externally. The EIA will be reviewed further to consultation findings.

SWP has undertaken a program of community engagement since the introduction of FRT to build trust and to help build peoples understanding of its use and how safeguards are put in place to ensure that FRT is not used disproportionately.

Since 2018, a number of police open days took place to engage with members of the public who could see inside FRT vans and a demonstration of how they work. These have all been very positive. In addition, there has been engagement with divisional community cohesion groups, giving presentations on FRT.

It has been found that, overwhelmingly, there is public support for the use of FRT and that an overwhelming majority of people consider it acceptable to be used. Maintaining a dialogue with the communities we serve is an important part of SWP Facial Recognition strategy.

During the 3 month OIFR trial the programme team will ensure that the trial is supported by a comprehensive communication strategy and engagement with stakeholders is maintained throughout.



Consultation Log
Automated Facial Rec

South Wales Joint Independent Ethics Committee

Briefings took place with the committee in November 2021 and March 2022. The pilot of the OIFR app was predominantly presented to the group, but all areas of Facial Recognition Technology was discussed. The grounds and reasons for use of the app were relayed including use cases and when the app can be expected to be used.

In addition, the scrutiny placed on uses and each use including the use of body worn video and subsequent reviews, officer engagement and feedback was also relayed.

During the follow up meeting in March 2022 following the end of the 3 month pilot, the results and use cases along with lessons learnt were also discussed.

The group posed questions to the project team around use of the app, scrutiny of the app, lessons learnt and progression. Positive feedback and support was received with a commitment made by the project team to further engage with the group at the next relevant time and stage.

Cardiff Community – 19th March 2022

During the live Deployment , the project team engaged with members of the community. Literature was handed out and people invited to observed the ongoing testing operation. The support was extremely strong for its use with people generally happy with the use. Further FAQ's in relation to image retention periods has been created on the website as a result of feedback from the public during this event to ensure that live facial recognition is full understood.

Further consultation is due to take place with communities on 16th June, 16th July and during the evaluation Deployment, TBC.

Public Perception Surveys – South Wales Police 2022

More recent studies of the technology have been conducted by South Wales Police as 'Show and Tell' style events. The engagement events have taken place in a variety of locations over the Summer of 2022 resulting in 155 responses.

In considering the results of this study, the following headlines are apparent:

- 88.4% of individuals were not concerned by SWP utilising Live Facial recognition in comparison 10.3% who had concerns. The concerns expressed related to data protection issues and general trust in the Police
- 76.8% of respondents considered that SWP use of LFR would lead to little or no impact upon them going about their daily business in comparison to 7.7% who considered it would have a large or significant impact upon them going about their daily business

79.4% of respondents stated that they would not change their plans to attend a location where they knew SWP were utilising live facial recognition compared to 6.5% who said they would.

b) How have the consultees been informed of the results of consultation?

The Covid pandemic has delayed a full consultation exercise on the use of FRT, however, a full and thorough consultation exercise is to be scheduled both internally and externally. The EIA will be reviewed further to consultation findings and consultees informed of the results.

3. Equality Analysis

<p>a) From the research and consultation, is there an evidence that the guidance, procedure or project could be perceived as discriminatory or could damage good relations between different groups of people?</p>
<p>Social observation indicates women change their appearance more frequently and significantly than men which may impact the performance of LFR. Reports suggest that facial contouring through the use of cosmetic make-up application may impact on the LFR system's performance.</p> <p>The Metropolitan Police Service have conducted small trials which also suggest that the accuracy of facial recognition is lesser for females than males. SWP are in the process of evaluating the next generation algorithm the M40.</p> <p>As a result of the NPL Equitability Study findings, it has been confirmed that at lower Threshold settings, there was a statistically significant difference in the number of false positive identifications created for black females. This was not the case where the Threshold was set to 0.6 or above.</p> <p>The agreed Threshold will be set to ensure equitability across all demographics with an acceptable likelihood of a false positive alert being created.</p> <p>There may be occasions where a lower Threshold is necessary and proportionate, given the circumstances present at the time to the authorising Officer. In these circumstances, the Authorising Officer will need to be cognisant of the impact that lowering the Threshold could have on the false positive identification rate, brief staff accordingly and revert to the minimum agreed Threshold setting as soon as the necessity to reduce the Threshold no longer exists.</p>
<p>b) What negative implications, if any, have been identified through the research and consultation?</p>
<p>As above.</p>
<p>c) What positive implications, if any, have been identified through the research and consultation?</p>
<p>As discussed previously results of the survey undertaken by 'The Ada Lovelace Institute' indicate that the British public are prepared to accept use of FRT in some instances, when there is a clear public benefit and where appropriate safeguards are put in place, but they also want the government to impose restrictions on its use.</p> <p>Most people think FRT should be permitted for use by police in criminal investigations (70%).</p> <p>The EIA will be reviewed further to consultation findings and consultees informed of the results.</p>
<p>d) From the research and consultation, is there any evidence that the Guidance, Procedure or Project discriminates directly or indirectly, against any member of the public or South Wales Police staff?</p>
<p>As point (a) above.</p>

4. Equality Review

a) What key changes have been made throughout the EIA process to reduce adverse impact or promote good relations between different groups of people?

To promote good relations and ensure that any adverse impact on the protected characteristics is considered when using the FRT; SWP will be informed by Demographic Differential testing with the aim to ascertain whether there is a bias towards gender, ethnicity and age.

As indicated above, it is recognised that at lower Thresholds, the false positive identification rate increases and this may disproportionately affect different demographic groups, most notably black females. For this reason, a Threshold where equitability is achieved across all demographics whilst maintaining an acceptable rate of likelihood of the creation of a false positive alert is recommended as a minimum for LFR Deployments.

A Threshold that reduced the likelihood of high scoring non-mated comparisons occurring is also proposed for OIFR to reduce the likelihood of high scoring non-mated comparisons occurring.

b) What changes, if any, were considered but not implemented? Please state why.

Not applicable at this time.

c) If the potential remains for the Guidance, Procedure and Project to have a negative impact on one or more of the protected characteristics, explain why implementation is to continue, and how this can be justified.

SWP acknowledge that there has been legitimate debate in the media concerning potential bias around gender and ethnicity. People are rightly concerned that FRT technology may discriminate against certain ethnic groups and also against women.

SWP have worked with the Metropolitan Police and the National Physics Laboratory to undertake a major study to provide a definitive answer on this legitimate area of concern. The NPL Equitability Study findings can be found at:

[frt-equitability-study_mar2023.pdf \(science.police.uk\)](https://www.science.police.uk/frt-equitability-study_mar2023.pdf)

FRT modernises what the police have been doing in a much more effective and efficient way. By combining cutting edge technology and a skilled workforce, which brings offenders to justice quicker than ever. The technology has an important role to play in helping protect the most vulnerable in communities. It allows for the faster identification of offenders which improves the quality of investigations. This results in victims seeing the perpetrators of crime brought to justice in a timelier fashion which frees up resources to allow us to understand and respond to the needs of the community.

The factors which justify the use of FRT:

- Faster identification of offenders
- Perpetrators of crime brought to justice in a timelier fashion
- More efficient use of resources
- Increased conviction rate
- Reduced crime and disorder in localities where it is deployed
- FRT lets police officers spend more time on keeping communities safe

Although an adverse impact has been identified the core principles of lawful operational policing are detailed below and on balance justify the importance of the continued use of all methods of FRT.

- Protecting life and property
- Preserving order
- Preventing the commission of offences
- Bringing offenders to justice

These principles are consistent with the definition of law enforcement purposes under Part 3, section 31 DPA: 'the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, including the safeguarding against and the prevention of threats to public security'.

The legal framework which contributes to the use of the FRT:

- Common Law
- Equality Act 2010
- Police and Criminal Evidence Act 1984
- Human Rights Act 1998
- Data Protection Act 2018
- Freedom of Information Act 2000
- Protection of Freedoms Act 2012
- Regulation of Investigatory Powers Act 2000

5. Monitoring

a) What arrangements have been made to monitor the Guidance, Procedure or project? Identify monitoring review dates.

The Joint DSD oversee the day to day governance of the FRT project. The Project Lead has the responsibility for the timely progression of the programme's work streams.

The EIA will remain under review, including internal and external consultations in regards to FRT and any proposed further research that is identified, proposed or undertaken. This EIA will be reviewed at least annually.

6. Final Approval and Sign off

This Full Equality Impact Assessment was completed by:

Name	Position	Date
Ben Gwyer	Facial Recognition Inspector	09/05/23

This Full Equality Impact Assessment was authorised by:

Name	Position	Date

Equality, Diversity and Inclusion Board

Date submitted:	
Authorised:	

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Appendix A

Amendment Log

1. Use this table to record and explain any decisions / amendments made during the development or review of the Guidance, Procedure or Project.

Decision / Amendment	Rationale / Explanation of Action taken	Authorise By

2. Record of responses received during the **consultation** process.

Consultee	Comment / Response	Action and Rationale