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### **Forewords**

### **Foreword**

from The Rt Hon. the Lord Hanson of Flint, Minister of State (Lords Minister)



This Research, Development and Innovation strategy will help the Home Office to go faster, push further, and ensure research, development and innovation supports the Home Office and the Plan for Change, including the Safer Streets mission, National Security, Asylum transformation, and Border Security. It will help us to respond to the pace of technological change that, coupled with the extent of turbulence and uncertainty in the world today, requires us to challenge ourselves to look ahead and adapt, through horizon scanning, prediction, preparation and thinking differently. We have seen this need with Artificial Intelligence,

which has brought huge opportunities to deliver our services efficiently and effectively, but also new threats and risks, for example, in the way it is being exploited by terrorists and crime groups.

Research, development and innovation plays an important role in addressing the Home Office's priorities. Our research successes in the Home Office include the development of radiological and nuclear detection capabilities to address the threats posed by state actors and terrorists. Our development successes include integrated surveillance technology for tackling dangerous crossings in the English Channel. Our innovation successes include the development of algorithms that help deliver DNA profiles to police in 10 seconds, over 1,000 times faster than manually.

This strategy will enable more coordinated delivery of our research, development, and innovation ambition, taking a whole-system approach to this to help keep the public safe and borders secure.

### **Foreword**

from Chief Scientific Adviser Professor Jennifer Rubin



With the pace of technological change, we need a fundamentally different approach to addressing certain complex challenges. Delivering for the public depends upon our ability to try new things and build the evidence base for whether and how they are working – learning and improving as we harness the huge benefits as well as mitigate the threats posed by malicious use of technology; and deliver value for public money. The Research, Development and Innovation strategy places a systems-thinking, agile, evidence-led and evidence-building approach at the centre of the Department's decision making. It will enable us

to capitalise on our research, development and innovation ambitions over the next five years, ensuring we are ready to deploy the right science and technology across policy and operations and continuously improve the services we provide for the public, whilst preparing ourselves for the future.

When I talk to our partners, it is clear there is strong motivation to work with the Home Office to deliver across security, public safety, and borders, and we cannot do this alone. This strategy will make collaboration and engagement on research, development, and innovation easier, as well as improving our ability to resolve shared challenges and utilise this collaboration to deliver for the public.

I am excited about the central role this strategy, and its implementation, will play in helping us keep citizens safe and the country secure.

### **Executive summary**

Research, development and innovation (RDI) plays a significant role in addressing the complex challenges we face across the Home Office, helping us to develop technologies and services and build the evidence base we need to better protect the public and keep our borders secure. Whether it is supporting efforts to halve knife crime in a decade, or improving our ability to detect deepfakes that can be used for a range of harmful activity such as election interference, the effective use of RDI drives delivery across all Home Office interests – from supporting decision-making on policy and legislation, through to improvements in operational activity, and for our partners in the intelligence agencies and policing.

Our vision is for research, development and innovation to be central in the Home Office's efforts to deliver a safer, fairer and more prosperous UK.

To deliver better, more efficient outcomes from our interventions our strategy takes a system-wide view. It supports existing Home Office strategies<sup>1</sup> along with our short-term needs, medium-term capability development and longer-term adaptability and resilience to achieve this vision. It is aimed at the whole Home Office, our operational partners, and the wider RDI ecosystem in government, our supplier base, and internationally.

Our strategy aims to improve RDI in the Home Office, responding to our drivers for change (chapter 1). Central to our strategy are four **ambitions**:

- a culture of innovation fostering the conditions which encourage scientific inquisitiveness and promote an innovative mindset from the top down, helping us to draw on RDI at the earliest opportunity. (chapter 2)
- challenge-led RDI focussed on addressing our priority policy and operational challenges, keeping us focussed on pulling RDI through for maximum impact. (chapter 3)
- capability driven developing coherent structures and building and nurturing capabilities that focus on our challenges, accessing RDI expertise to create an effective and efficient ecosystem. (chapter 4)
- in collaboration partnering across, and outside of, government and internationally on our common RDI interests and challenges whilst supporting efforts to build UK strategic advantage. (chapter 5)

Existing strategies include, Counter-terrorism strategy (CONTEST) 2023 – GOV.UK (https://www.gov.uk/government/publications/counter-terrorism-strategy-contest-2023), Serious and organised crime strategy 2023 to 2028 – GOV.UK (https://www.gov.uk/government/publications/serious-and-organised-crime-strategy-2023-to-2028), and others.

To achieve our ambitions, our strategy has a 5-year horizon and includes a series of **commitments**, which will be delivered through **actions to maximise the impact of RDI for the Home Office**. These combine the introduction of new approaches with improvements to what we are already doing. We will realise these through a supporting **implementation and evaluation plan** which we will report progress on publicly.

The strategy also presents a series of **case studies** to highlight the impact of RDI in the Home Office and **spotlights** focused on our RDI interests and functions. Finally, Annex A provides an overview of what will change as a result of this strategy.

### **Home Office Outcomes**

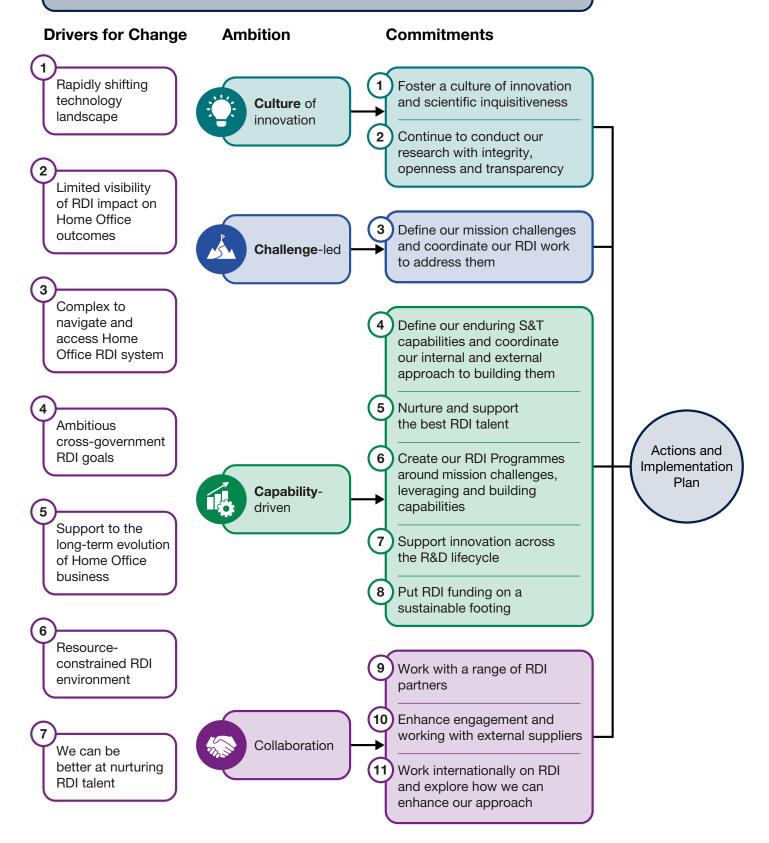
This strategy will enable delivery across the Home Office's priority outcomes. For example,

- Safer Streets and Public Safety. Delivering RDI, and leveraging science and technology capabilities, that help to address specific cross-cutting challenges highlighted in the Safer Streets Mission, for instance halving knife crime within a decade.
- Border Security. Ensuring we have the research and Science and Technology expertise needed to help strengthen our response to border security threats.
- Asylum Transformation. Innovation to help build a flexible, sustainable and efficient system.
- Homeland Security. Enabling work on counter-terrorism, counterextremism, counter-state threats, economic crime and cyber-crime and threat through boosting our capabilities in key technology areas, like Al and telecoms, and helping us get ahead of threats through futures.
- Economic Growth. Stimulating investment in innovative dual-use technologies from the UK's National Security and Defence sector can enable the Home Office to support the UK's economic growth and prosperity whilst also pulling through innovative technology to meet the Department's operational and policy goals.

### Research, Development and Innovation Strategy on a Page

#### **Our vision**

is for research, development and innovation to be central in the Home Office's efforts to deliver a safer, fairer and more prosperous UK





# 1. Home Office Research, Development and Innovation

1. The Home Office's role is to keep the UK safe and secure, delivering services that make a real difference to the public. Times of unprecedented change and challenging circumstances remind us of the importance of RDI in the successful delivery of our work. We use the term RDI to include foundational Research and Development (R&D), applied science, analysis or advanced technologies, and data analytics.<sup>2</sup> It is essential to our missions in Homeland Security, Migration and Borders, and Public Safety.

### **Our existing RDI successes**

- 2. RDI has long played an important role in the successful delivery of the Home Office's missions. In Homeland Security we research and apply data analysis techniques to disrupt terrorist activities. In Public Safety we operate the national DNA database, which has facilitated over 775,000 DNA matches to unsolved crimes, and we continue to deliver improvements to these databases, such as through the integration of face imagery. In Migration and Borders, we have researched and implemented biometric technologies to improve passenger flow whilst maintaining our border security.
- 3. As an RDI-enabled Department, we apply the full range of science and engineering disciplines to provide timely expert advice, specialist support to operations, innovative technology solutions development, equipment assurance to meet regulatory responsibilities and longer-term R&D. This is a multi-million-pound portfolio delivering impact across the Home Office. To continue these successes and more, we need an approach that enables us to be agile and adapt to our rapidly evolving environment.
- **4.** The strategy showcases several of our many RDI successes. The case studies also demonstrate how we help deliver better shared outcomes across the Home Office, provide modern services for the public, and improve our resilience for the future.

Our definition of R&D is based on that used in the European System of Accounts – 2010, "Creative work undertaken on a systematic basis to increase the stock of knowledge, and use of this stock of knowledge for discovering or developing new products, including improved versions or qualities of existing products, or discovering or developing new or more efficient processes of production". This is based upon and viewed as equivalent to the definition of R&D in the OECD 2015 Frascati Manual. We think of innovation as a way of working that allows people to leverage science, technology, and other resources, to help deliver on our Departmental goals through structured and unstructured problem-solving processes.

### Our drivers for change

**5.** To help realise our vision for RDI and deliver on the Home Office's priorities, this strategy responds to the our seven drivers for change:

**Driver 1:** The **rapidly shifting technology landscape**, as seen with Artificial Intelligence (AI), means that the risks, threats and opportunities of technology need to be more widely understood and out-paced.

**Driver 2: We want RDI to play a greater and more visible role in addressing Home Office outcomes**. The timely 'pull-through' of RDI – to inform policy or deliver cutting edge technology into operations – is often difficult to achieve, and we want RDI to be considered at the start of our decision making. In addition, the impact of RDI could be better understood in the Home Office, and it is challenging to measure the overall return on investment that RDI has at an organisational level.

Driver 3: With the integration of the Home Office Centre for Applied Science and Technology into the Defence Science and Technology Laboratory (Dstl) in 2018 and the establishment of innovation platforms like our Accelerated Capability Environment, our internal RDI landscape has evolved. This has realised benefits, but has also created complexity in navigating and accessing it and also understanding our RDI priorities.

**Driver 4:** The Department for Science, Innovation and Technology (DSIT) and Prime Minister-chaired Cabinet Committee, the Science and Technology Committee, aim to improve people's lives by maximising the potential of science and technology, aiming to bolster the UK's economic growth and national security. **UK government ambition and investment in RDI has never been stronger**, presenting opportunities we can **capitalise on**, whilst supporting economic growth

**Driver 5:** RDI has a significant role to play in the **long-term evolution of Home Office business**, which is shifting to take a systems approach, better harness data and technology, and improve our organisational resilience supporting the delivery of a more productive public sector.

**Driver 6:** We have a **resource-constrained environment**. Against complex responsibilities, with a variety of policy and operational priorities, the Home Office is required to think differently about how we deliver RDI.

**Driver 7:** We want to do better at **nurturing RDI talent internally and externally** while building an innovation mindset in the Home Office.

- **6.** This strategy has been developed through consultation with stakeholders across the Home Office, government, operational partners, academia and industry.
- 7. It sets out how we will respond to this evolving RDI landscape to better anticipate future challenges and opportunities to improve our resilience.



2

Fostering a Culture of Innovation

### 2. Fostering a Culture of Innovation

We will build our culture of innovation and scientific inquisitiveness to draw together our system as one and place RDI at the centre of decision-making processes to help achieve the Home Office's outcomes. This is whilst ensuring our decision making is underpinned by research that continues to be delivered with integrity in mind.

### **Commitments**

- Commitment 1: We will foster a culture of innovation and scientific inquisitiveness across the Home Office.
- Commitment 2: We will continue to conduct our research with integrity, openness and transparency.

### Fostering a culture of innovation and scientific inquisitiveness

- 8. Our Chief Scientific Adviser (CSA) is head of profession in the Home Office for the Government Science and Engineering (GSE) Profession and leads the Home Office's scientific community. They are supported by teams across the Home Office and independent advisory bodies, who work alongside policy and operational colleagues and partners. The CSA is responsible for overseeing the formation and delivery of this strategy.
- 9. The solutions to the challenges the Home Office faces are often complex, requiring fresh thinking and diverse perspectives, which are both key parts of innovation. Fitting with the ambition for a 'Modern Civil Service', we will cultivate an environment that values and fosters RDI across the whole Home Office.<sup>3</sup> We are already embedding RDI, but will push ourselves further through:
  - cultivating a learning and scientifically inquisitive organisation –
    we will evaluate, learn and draw in best practice to support effective
    decision making, considering RDI early on and encouraging measured
    risk taking, understanding that some innovations may fail.
  - supporting a diverse community we will foster a diverse and inclusive community, which embraces varied perspectives, experiences and challenge. As part of this, we commit to developing our scientists and researchers, as well as supporting and pursuing innovation in the rest of the Department.

<sup>3</sup> https://www.gov.uk/government/publications/a-modern-civil-service#full-publication-update-history

- promoting clarity of responsibilities we recognise that all Home Office staff have a role in embedding innovation into their activities, and that our leaders must support and enable this culture.
- **planning for the long term** we will promote resilience through longer-term planning, and the development of RDI skills pipelines.
- **10.** Ultimately, we want the Home Office to think RDI first: considering how RDI can inform and enhance their work from the get-go of policy formulation or operational delivery, with guidance and oversight provided by the CSA.

# Case study: Equipping operational partners with innovative technologies



Equipping frontline officers with innovative technologies ensures they can maximise the service they deliver to the public and keep pace with a changing landscape and the broader threat this presents. For policing, the Home Office focuses its investments on challenges shared across all police forces and where it is appropriate to manage centrally.

The creation of 'crime scenes' has long been used as a tool for

training operational colleagues, supporting with intelligence and investigation. This has innate challenges such as the need to be physically present and the cost of recreating reality. Virtual reality (VR) has provided great opportunities in training to address this as it overcomes the need to create these complex environments, increases throughput while requiring reduced time away from the front line. We have successfully worked with partners in the US and Dstl to produce three virtual complex crime scenes which would be difficult to recreate for training – a bomb factory, drugs laboratory and post blast scenario – to demonstrate this innovative capability to UK police forces. We are now supporting its operational rollout.

### Research integrity, openness and transparency

11. We conduct research with integrity and rigour to maintain public confidence in the underpinning evidence for decision-making. We are committed to research integrity and recognise the importance of the principles of the Concordat to Support Research Integrity in this regard.<sup>4</sup>

<sup>4</sup> https://www.gov.uk/government/publications/implementing-the-concordat-to-support-research-integrity-within-government

- 12. Ethical decision-making helps guide the Home Office's approach to RDI and its application in policy and operational activity. Internal and independent groups support this, such as the Biometrics and Forensics Ethics Group, who offer independent, expert, ethical advice on the collection, use and retention of biometric and forensic material, and on the use of large and complex data sets. We remain committed to placing the Home Office's values of compassion, respect, courage, and collaboration at the heart of everything we do. 6
- 13. To improve rigour and support transparency, the Home Office will be clear with our RDI partners and the public on our RDI activities. We will drive forward improvements in the delivery of research integrity and openness, by:
  - strengthening our communication of RDI this includes on our RDI priorities, the R&D programmes we are interested in, and the impacts of RDI and the public services we deliver.
  - enhancing our approach to open science and research publication

     building knowledge, continuing to apply cross-government guidance,
     like the Government Social Research: Publication protocol, and making our research more accessible where possible.<sup>7</sup>
  - strengthening the co-ordination and oversight of research integrity in the Home Office – this includes reviewing our current arrangements, drawing on best practice, such as guidance from the Government Office for Science and UK Research and Innovation (UKRI).<sup>8,9</sup>

### **Action: RDI portal**

We will create a new Home Office RDI portal on GOV.UK. This will draw together our RDI information and communicate across our R&D programmes and areas of research interest (ARIs). It will support public understanding of the RDI used by the Home Office, to promote awareness of how we help keep the public safe and secure.

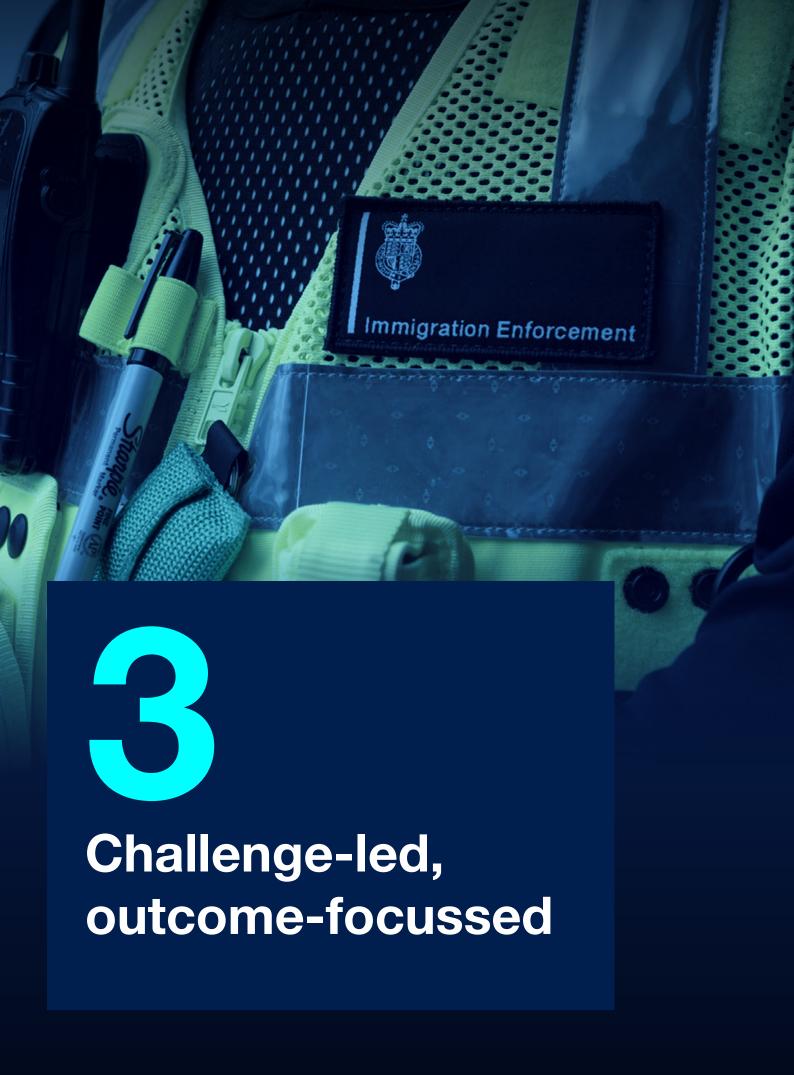
<sup>5</sup> https://www.gov.uk/government/organisations/biometrics-and-forensics-ethics-group

<sup>6</sup> The Home Office's values (https://careers.homeoffice.gov.uk/how-we-work)

<sup>7</sup> https://www.gov.uk/government/publications/government-social-research-publication-protocols

<sup>8</sup> https://www.ukri.org/what-we-do/supporting-healthy-research-and-innovation-culture/research-integrity/

<sup>9</sup> https://www.ukri.org/



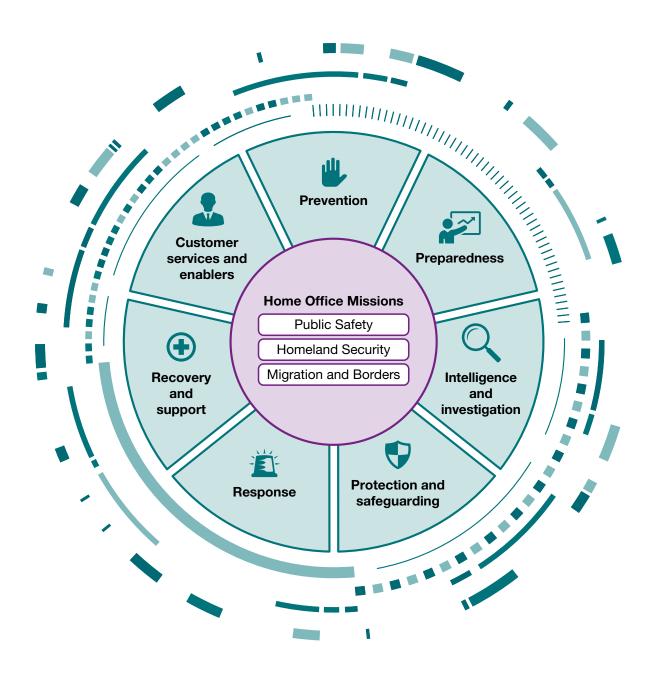
### 3. Challenge-led, outcome-focussed

Research, development and innovation must be focussed on the policy and operational 'challenges' of the Home Office. This will ensure we are always prioritising on delivering against our Departmental outcomes, taking a cross-system approach to this, and keeping us focussed on 'pulling through' research into advice and products for policy and operational colleagues and partners.

#### Commitments

- Commitment 3: We will define the Home Office's mission challenges and coordinate our work to address them.
- **14.** RDI must be focussed on the Home Office's priority policy and operational challenges. This will ensure we are always prioritising delivering against our outcomes, taking a cross-system approach with clear governance and oversight, and focussing on 'pulling through' research into advice and products for policy and operational colleagues and partners.
- 15. We have defined a series of 'Home Office mission challenges' to act as the focal point for our RDI activities. These challenges are underpinned by the three Home Office missions Homeland Security, Migration and Borders, and Public Safety and represent policy and operational focus areas where RDI can support problem solving. Being led by these challenges will ensure we focus on delivering advice and innovative solutions to those who use them whether in policy development, operational delivery, investment decisions, or change programmes.

### **Mission Challenges**



### **Spotlight: Home Office mission challenges**

**Preparedness:** preparing to respond to planned events, the materialisation of threats, or unforeseen events.

**Intelligence and investigation:** gathering information on threats and opportunities, then investigating them using a variety of analytical techniques. This includes the collection, processing and analysis of information and turning it into actionable intelligence or evidence products to investigate and prosecute crime.

**Prevention:** intervening to tackle threats to the UK and the public before they materialise.

**Protection and safeguarding:** protecting the safety and wellbeing of citizens, and our operational colleagues, as well as protecting public spaces, infrastructure, our values and sovereignty in the UK and overseas.

**Response:** responding to crisis, whether in the UK or overseas.

**Recovery and support:** deploying technologies and scientific expertise to recover from incidents, and support victims of crime.

**Customer services and enablers:** Use of RDI, and broader evidence, in supporting enabling functions, such as HR and commercial colleagues, and wider Home Office services, such as HM Passport Office and UK Visas and Immigration.

16. The ARIs, which detail the Home Office's main research questions, provide the detailed topics behind the mission challenges. They support the alignment of scientific and research evidence with policy development and decision making. The ARIs will be reviewed regularly and evolve according to our priorities.

### Case study: Securing our borders – Disrupting small boats crossings



Small boats crossing the English Channel pose significant risk of loss of life and are facilitated by serious organised crime gangs. The Small Boats Operational Command (SBOC) makes use of innovative technologies to target the serious organised crime groups, disrupt their activities and support prosecutions.

SBOC delivered the UK's first autonomous, remotely piloted surveillance operation in the

channel, part of a wider cutting-edge surveillance system to prevent small boat crossings. We estimate this has saved over 100,000 lives and maintained border security by detecting and tracking small boats. The project also supports response and intelligence and investigation to detect, deter and disrupt these activities including from serious organised crime groups, including supporting the UK's first prosecution using drone footage. Teams also utilised niche open-source information and big data analytics to disrupt over 27,000 small boat embarkations, which led to the arrest of multiple facilitators in the system and identified over 700 social media accounts advertising associated criminal services.



# 4

# Capability-driven

maximising the impact of Research, Development and Innovation

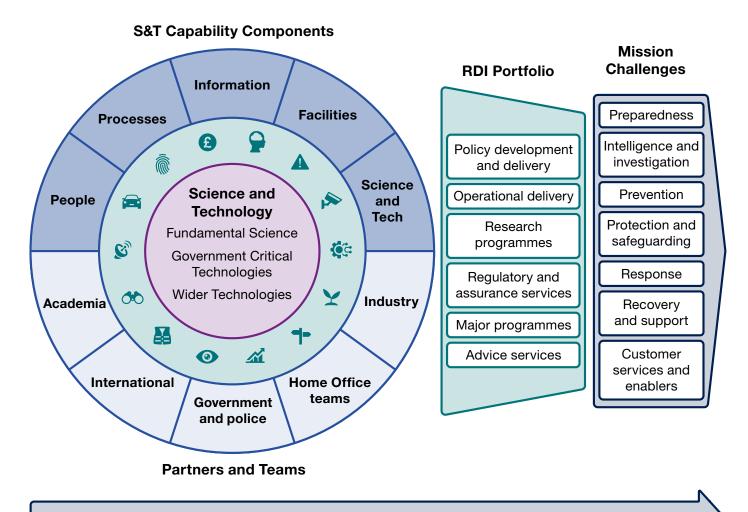
# 4. Capability-driven – maximising the impact of Research, Development and Innovation

We want RDI, not just for the sake of it, but to apply it to addressing the problems Home Office teams need solving. To do this, we need to enable RDI to be adopted, scaled and pulled through into operational use. We will build and nurture enduring Home Office Science and Technology (S&T) capabilities. Capabilities will supply expertise into focussed RDI programmes, existing delivery mechanisms and the provision of advice. They will drive the adoption of and help overcome barriers to scaling RDI. This will improve our overall RDI Delivery Model, ultimately delivering solutions to our challenges more quickly.

#### Commitments

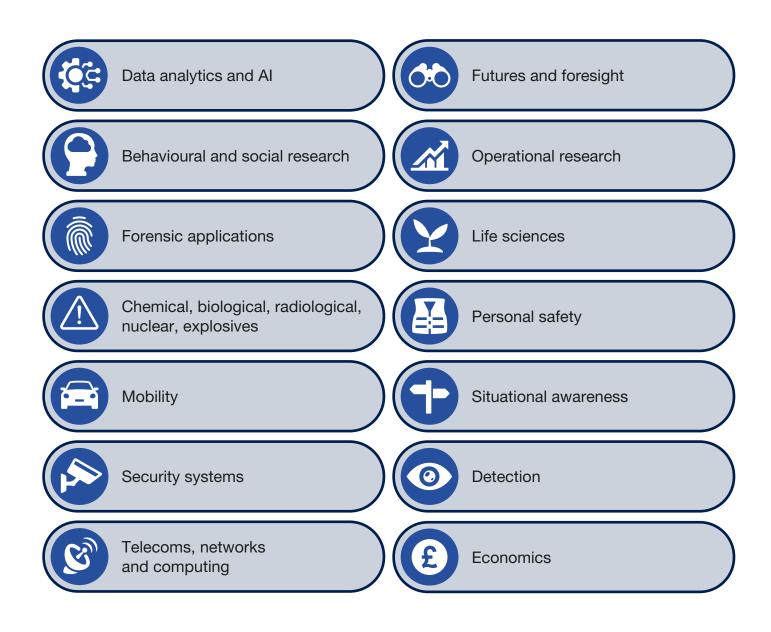
- Commitment 4: We will define our enduring S&T capabilities and take a co-ordinated internal and external approach to build them.
- Commitment 5: We will nurture and support the best talent to build on our S&T capabilities.
- Commitment 6: We will create our RDI programmes around mission challenges, leveraging and building capabilities.
- Commitment 7: We will support innovation across the R&D lifecycle.
- Commitment 8: We will put RDI funding on a sustainable footing.
- 17. RDI is a powerful tool that can help us solve complex problems and address our mission challenges. To do this at scale, RDI must be adopted and pulled through into operational use. We will build and nurture enduring Home Office S&T capabilities, which will supply expertise into focussed RDI programmes, policy development, project delivery and operational delivery. They will drive the adoption of RDI and help overcome barriers to scaling RDI, which will improve our overall RDI Delivery Model, ultimately delivering solutions to our challenges more quickly.

### **RDI Delivery Model**



- Pull through and operationalising RDI
- **18.** Our enduring S&T capabilities consist of five core components that will be drawn collaboratively from the Home Office and through a range of external expertise.
  - **people** providing thought leadership and subject matter expertise through our internal and external RDI skills base.
  - processes the legal, ethical, commercial, financial and day-to-day business processes to ensure compliant adoption of technologies that meet a range of standards.
  - information, data and systems access to and management of a range of data sets and information products drawn on by the capability to deliver RDI solutions.

- facilities the offices, laboratories, testbeds and development platforms accessed by the capabilities to carry out research and develop solutions.
- science and technology The fundamental science and range of technologies leveraged by the capabilities to create innovative solutions to mission challenges.
- 19. S&T capability plans will set out the vision and roadmaps to ensure long-term sustainability and that the Home Office stays on top of scientific endeavour and advancements in technology. We will build and nurture capability around the following domains and disciplines:



### Spotlight: S&T capabilities

**Data analytics and Al:** advancing the effective use of data to improve public services while addressing security and public safety risks. This includes safely deploying data-led solutions at scale across Home Office interests and exploring automation through Al (for example, for threat detection, intelligence gathering, and identifying harmful online material).

**Futures and foresight:** systematic thinking about the future and analysis of scenarios to support policy and strategy development, deriving insight through activities such as horizon scanning to understand the threats and opportunities of emerging technologies.

**Behavioural and social research:** understanding people and their social interactions to support the development of better interventions and optimising the performance of interventions (for example, understanding crowd behaviour, human-systems interactions and behaviours around the border).

**Operational research:** providing expert support to decision and policy makers through an understanding of operational problems by applying scientific methods to analyse a wide range of real-world issues.

**Forensic applications:** physical, behavioural and digital forensic sciences used in the investigation of crime, the protection of vulnerable people and biometric applications (for example, in fingermarks, DNA, and digital forensics).

**Life sciences:** the understanding of biological systems and how they respond to a range of threats and harms (for example, the use of veterinary medicine to protect the welfare of animals used in scientific research, including alternatives to their use).

**CBRNE:** developing protective solutions for and understanding the threats associated with chemical, biological, radiological, nuclear, and explosive (CBRNE) risks.

**Personal safety:** developing equipment used for the protection of operational officers in frontline Home Office commands and policing. This includes personal protective equipment (PPE) and armed policing equipment, including less lethal technologies.

**Mobility:** improving our understanding of and ability to move within the environments we operate in, including the consideration of counter-technologies (for example, vehicle stopping). This includes land, maritime, air and space.

**Situational awareness:** the use of RDI to understand changing policy and operational landscapes and draw together various data sources to inform real-time decision making during a crisis. Preparing for and managing the response to crisis and major events including with expert advice.

**Security systems:** protecting people and places through security technology and solutions, including CCTV, physical security systems and biometric security technologies such as those used to protect citizens' identity on passports.

**Detection:** detection technologies and systems used for public venues, the border, policing, and other operational locations (for example, knife detection technologies, drugs detection, drone detection and x-ray).

**Telecoms, networks and computing:** understanding of technologies applied in communication networks including future telecoms and quantum technologies), cyber security, computing, and the use of Position, Navigation and Timing.

**Economics:** economic advice, policy appraisal and analysis that underpins investment decisions, supports delivery and benefits realisation.

20. Although we touch on specific technologies, this strategy is technology agnostic. S&T capabilities will leverage and influence the full spectrum of RDI across all technology readiness levels (TRLs), from fundamental science, through emerging technologies to proven technologies and technologies with uses applicable to us.<sup>10</sup> The Home Office also aims to help drive and exploit the development of the UK government's **critical technologies**. These will be vital to addressing our mission challenges now and in the future.

### Action: Building our Data analytics and AI S&T capability

We are investing to expand and transform our research and development capability that is planning, coordinating, and delivering AI R&D to support the Home Office's outcomes. The programme is designed to foster collaboration between industry and academia, driving cutting-edge innovation to generate robust scientific evidence. This includes research and proof-of-concept tools aimed at addressing Home Office AI risks, threats and opportunities.

<sup>10</sup> https://www.gov.uk/guidance/defence-and-security-accelerator-terms-and-conditions-and-contract-guidance#what-dasa-funds

## Case study: Futures and foresight capability – supporting our resilience

From the advent of fingerprinting, to more recently AI, what was once the technology of tomorrow can have a significant impact today. We need to use technology insights, futures (including horizon scanning) and foresight methodologies to stay abreast of the, often rapid, development of technology and ensure our S&T capabilities can respond. We will conduct horizon scanning in each defined S&T capability area to identify future opportunities and threats, drive RDI programmes, and assess future use-cases for technologies and innovation.

More broadly, insights from futures and horizon scanning can help the whole Home Office consider plausible future worlds and their implications for our business. This will aid strategic decision making, support long-term planning, and improve our organisational and policy resilience. The Home Office will embed futures and foresight further into its decision-making processes.

'Future of the Internet' project for Preventing Radicalisation Online. Futures scenarios were developed to support our online harms policy development, where we need to understand how future technology trends impact government's ability to counter radicalisation and terrorist use of the internet. The analysis covered topics such as how technology trends will impact online behaviour over the next 5 to 10 years, and how online spaces and emerging technologies may be exploited by terrorists. The scenarios developed enabled policy teams to have a greater understanding of the ways the technologies may be used to support terrorist activity, as well as the role they play in supporting online radicalisation processes.

<sup>11</sup> Futures: "An approach or way of thinking about the possible, probable, and preferable futures and the underlying structures that could give rise to particular future characteristics, events, and behaviour." Foresight: "A process by which one comes to a fuller understanding of the forces shaping the long-term future which should be taken into account in policy formulation, planning and decision making." Horizon scanning: "The systematic collection of insights on emerging trends and weak signals of change to identify potential threats, risks and opportunities in the policy and strategy environment." (definitions from GO-Science's futures toolkit – https://www.gov.uk/government/publications/futures-toolkit-for-policy-makers-and-analysts).

### People at the core of our capabilities

- **21.** People are the most important component of our S&T capabilities. We will continue to attract and nurture RDI talent by focussing on:
  - **leadership,** communicating a compelling vision for RDI across the Home Office.
  - nurturing existing talent through talent management, professional development, and further building the GSE Profession and related professions.<sup>12</sup>
  - **encouraging** the best RDI talent to work in the Home Office, ensuring we can access the correct skills to address our RDI challenges and enhancing our approach to whole-career RDI opportunities.
  - enabling access to RDI expertise and advice, including external expertise, so that it is easily accessible to colleagues across the Home Office.

### **Action: Creating expert communities**

We will draw together expertise to provide advice and challenge from across the UK government and agencies, academia and industry, and international partners. We will broaden the breadth and depth of our access, such as through greater interchange of skills and experience with partners and intelligent use of seconding-in frontline officers.

# Case study: Developing our S&T capabilities – Forensic applications to support Safer Streets

The Home Office delivers a forensic service for policing and the criminal justice system through assisting live operations and investigations and supporting criminal convictions. This is coupled with R&D to enhance current forensic techniques and develop broader capability in areas such as facial recognition and digital forensics.

The Forensic Information Databases Service (FINDS) operates and administers the national forensic database systems that links forensic evidence (DNA, fingermarks and footwear marks) recovered from scenes of crime and arrestees (including vulnerable persons and missing persons). The National DNA Database (NDNAD) is a key forensic system which supported over 22,000 crime scene-to-subject DNA intelligence matches in 2022/23. DNA evidence is significant in the conviction of the perpetrators of many serious crimes. FINDs also assures forensic service providers with a proficiency testing system.

Our R&D enhances forensics capabilities. For example, in partnership with Dstl, the Home Office has developed world-leading guidance in the Fingermark Visualisation Manual, which provides advice to maximise fingermark recovery in criminal investigations. We are also creating the UK's first Y-chromosome reference database to identify and build stronger conviction cases for serious crimes such as rape and domestic violence – helping to combat violence against women and girls.

<sup>13</sup> https://www.gov.uk/government/groups/forensic-information-databases-service

<sup>14</sup> https://www.gov.uk/government/publications/forensic-information-databases-annual-report-2023-to-2024

<sup>15</sup> https://www.gov.uk/government/news/world-renowned-forensics-manual-released-openly

### Case study: Recognising innovation skills in the Home Office

We have focussed on placing science, innovation and evidence at the heart of decision-making in the Home Office. We run a number of events to upskill colleagues in RDI and to recognise innovative skillsets demonstrated across the Home Office, for example through Home Office Innovation Awards, initiated to champion innovative thinking.

The awards are open to all, with award categories recognising the many aspects of innovation including technological, operational, policy, and customer services – an award for projects that have not succeeded but have demonstrated an innovative mindset.

Award winners include the Online Fraud Charter outlined on page 44, and the radiological and nuclear detection capability highlighted on page 3.

### **Delivering impact from Research, Development and Innovation**

**22.** To address our mission challenges, S&T capabilities will drive solutions through a range of delivery structures within the Home Office. The RDI Portfolio will represent our total investment in RDI and will form the basis of future spending round bids for sustainable funding.

### Spotlight: RDI portfolio and structures in the Home Office

**Policy development and delivery:** applying RDI to shape new and existing policies across our Home Office missions by gathering evidence of the long-term implications of policy interventions and monitoring their impact through delivery. This helps focus public money on what is effective, and change things that are not working.

**Research programmes:** dedicated research programmes that are focussed both on building S&T capabilities and / or addressing key mission challenges – for example, tackling knife crime or reducing illegal immigration. We will draw on multiple capabilities for programmes of research across all TRLs from concept to operations.

**Major programmes:** the application of RDI to support major programme delivery – for example, the application of biometric technologies within the Home Office Biometrics Programme. We will apply economics and analytical methods to monitoring and evaluating the benefits delivered by major programmes. Typically, RDI solutions will be a higher TRL, ready to operationalise.

**Operational delivery:** the application of RDI to enable and improve operational delivery – for example the use of operational research to improve Border Force operations.

Regulatory and assurance services: providing regulatory and assurance services for policy, technology, and broader scientific work, including the life sciences – for example, policy and regulation of the Animals (Scientific Procedures) Act 1986 to drive compliant behaviours when animal testing is required. Undertaking of assurance activities to ensure policing equipment meets recognised standards for operational use and setting standards for the provision of forensic science services across the criminal justice system.

**Advice and evaluation services:** the provision of timely expert advice to ministers and officials directly by our S&T capabilities and via our independent advisory bodies. Also, evaluations of RDI interventions to ensure they support policy and operational aims.

To deliver RDI from concept to end-use, the Home Office will continue to follow delivery guidelines, such as the principles of the life cycle set out in the Government Functional Standard for Project Delivery.<sup>16</sup>

<sup>16</sup> https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1002673/1195-APS-CCS0521656700-001-Project-Delivery-standard\_Web.pdf

**23.** Throughout, we will take a proactive and strategic approach to planning and delivering our overall portfolio.

### **Action: Implementation of the new RDI Delivery Model**

- Review the RDI operating model in the Home Office, including how we deliver through our partner organisations to understand how we can transform effectively to this new model.
- Develop roadmaps to outline the short, medium, and long-term R&D requirements for building our S&T capabilities and delivering our portfolio, publishing these on GOV.UK where possible.
- Shape engagements around our mission challenges, collaborating closely with new and existing suppliers and government partners to enhance understanding of our RDI interests and build S&T capability. This will give the Home Office a better picture of the external R&D landscape and help us better prioritise our own investments.
- Prioritise R&D investment to have the greatest impact on the mission challenges, while providing value for money and timely delivery. This includes evaluating the impact of RDI for end users. We will measure the impact of this RDI Strategy across the entire RDI Delivery Portfolio by developing a monitoring and evaluation framework.

### Sustainable funding for Research, Development and Innovation

- **24.** Sustainable funding supports successful S&T capability development and the delivery of our RDI Portfolio. It ensures ideas can be scaled from a concept for addressing our mission challenges to a solution.
- **25.** Sustainable funding means prioritising and ringfencing RDI budgets, that are managed to deliver short and long-term benefits even when the products of transformative research may be some years after initial investment. Clear funding lines stimulate and create stability for our supplier base, helping to deliver continued innovation to keep the public safe.

- 26. To create a sustainable RDI funding environment, in the next 5 years we aim to increase the level of investment focussed on RDI, to support the Home Office's goals, and contribute to the Science Capability Review's assessment that further investment in RDI could have significant impact in the Home Office. We will look to realise these goals through spending review processes. We appreciate that funding envelopes may change, so to ensure this strategy's full impact, we will use our new RDI monitoring and evaluation framework to assess the return on investment to ensure flexibility and prioritisation across the RDI Portfolio.
- 27. We will also assess options for more multi-year funding arrangements for R&D programmes. Multi-year funding provides the Home Office and our suppliers with the certainty needed to invest in the physical space, people and skills, and technology for long-term delivery.
- 28. We will look for collaboration opportunities to jointly fund activities where it makes sense to do so, partnering across government, industry and academia. Through mutually beneficial relationships with research funders such as UKRI and through private finance initiatives such as venture capital funds, we seek to influence and coordinate RDI that delivers tangible outcomes for the safety and security of the UK.
- **29.** The Home Office's RDI spend is overseen by the CSA. They support value-for-money through ensuring spend is aligned with the priorities set out by ministers. This strategy will be a key support to this.

### Supporting innovation across the R&D lifecycle

30. Innovation plays a vital role in addressing our mission challenges and is embedded across our RDI Delivery Model. We have several established organisations that will allow us to partner with innovators across the public and private sector. These will support with sharing knowledge across sectors, promoting collaboration and bringing a co-creation mindset to solving our challenges.

<sup>17</sup> https://www.gov.uk/government/publications/government-science-capability-review

### **Spotlight: Organisations that enable innovation**

### Accelerated Capability Environment (ACE)18



ACE tackles public safety and security challenges arising from evolving digital and data technology. ACE creates innovative solutions through collaboration with public and private sectors to deliver impact to those on the front line.

### Defence and Security Accelerator (DASA)19



DASA, hosted within the Ministry of Defence, finds and funds exploitable innovation for a safer future. DASA is a cross-government service provider, enabling and facilitating National Security to leverage innovation from outside government at pace, and providing end-to-end services that enable innovators to develop ideas that keep the UK safe by staying ahead of the threats we face.

### Joint Security and Resilience Centre (JSaRC)<sup>20</sup>



JSaRC provides security outcomes for the UK by combining government, academic and private sector expertise. JSaRC's aim is to overcome the traditional barriers that have prevented collaboration between the private and the public sectors by improving the understanding both sectors have of each other and of the key issues that affect the UK's security and resilience.

### UK Research and Innovation (UKRI)<sup>21</sup>



UKRI builds a world-class research system by providing investment and support for researchers and businesses and helping researchers develop new skills to further their careers. UKRI enables collaboration and engagement across and beyond their communities, involving the wider public. UKRI improves the capabilities across the research system, within the UK and internationally, developing world-class infrastructure and supporting an inclusive and ethical research culture. UK Research and Innovation is made up of seven research councils, Innovate UK and Research England.

<sup>18</sup> https://www.gov.uk/government/organisations/accelerated-capability-environment

<sup>19</sup> https://www.gov.uk/government/organisations/defence-and-security-accelerator

<sup>20</sup> https://www.jsarc.org/

<sup>21</sup> https://www.ukri.org/

#### Innovate UK<sup>22</sup>



Innovate UK (IUK) is the UK's national innovation agency, supporting business-led innovation in all sectors, technologies and UK regions. IUK helps businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive, and easy to navigate.

# National Security Strategic Investment Fund (NSSIF)<sup>23</sup>



NSSIF is the Government's corporate venturing arm for dual-use advanced technologies. It is a joint initiative between HM Government and the British Business Bank. NSSIF invests commercially in advanced technology firms, alongside other investors, supporting long-term equity investment – 'patient capital' – and harnesses the Government's unique technology expertise. The Home Office will support the cross-government growth mission and develop our S&T capabilities to meet mission challenges by leveraging the opportunity presented by venture capitalism to develop appropriate dual use technologies for introduction to the Department.

# Action: Launching a new Home Office innovation service

To overcome a range of traditional barriers to scaling innovation, the Home Office will launch a new innovation service to pull through innovations into operational use more effectively. This will provide expert advice and co-ordination across the innovation community and help colleagues overcome some of the challenges and barriers faced when delivering innovative products and services.

<sup>22</sup> https://www.ukri.org/councils/innovate-uk/

<sup>23</sup> https://www.british-business-bank.co.uk/for-financial-advisors/equity-finance/national-security-strategic-investment-fund



# 5. Collaboration – strength through partnerships

No one organisation has the skills or resources to solve the challenges we face alone. We must work with a systems approach, across our partners, to deliver better shared outcomes around RDI. We will partner effectively to build our S&T capabilities and leverage them to address our mission challenges. Our partnerships are focussed on knowledge sharing, or based around joint activity – fostering innovation, and creating opportunities to share work and deliver efficiencies. We will do more of this, with both existing and new partners.

#### **Commitments**

- Commitment 9: We will work with a range of partners to build our S&T capabilities and deliver maximum impact from RDI.
- Commitment 10: We will develop better ways of engaging and working with external suppliers.
- Commitment 11: We will work internationally on RDI and explore how we can enhance our approach.

- **31.** Our partner base is continually evolving and represents a diverse cross-section of industry, academia, third sector and the public sector. We work together to deliver RDI through many channels, including direct contracting of R&D, leveraging other government frameworks, and drawing in direct expertise. Some examples of engagement are through:
  - roundtables and industry showcase days, to draw in diverse and different perspectives and / or challenge our thinking
  - conferences and events, like the Home Office-led Security and Policing event, the annual UK government national security and resilience forum<sup>24</sup>
  - established partnerships to access expert communities, like ACE and the Network for Security Excellence and Collaboration, NSEC<sup>25</sup>
  - novel opportunities to bring expertise in such as hackathons and sandpit events
  - co-creation spaces, such as JSaRC Cambridge, DASA White City, and ACE collaboration space
- **32.** We have a number of procurement routes open to our partners to meet RDI needs through the innovation cycle. These include but are not limited to open competitions, use of government frameworks such as those available from the Crown Commercial Services (e.g. Research & Insights Framework) or through collaborations with other government departments. Implementation of new procurement legislation will also help to drive opportunities for the public sector to innovate in its procurement. It will create a single procurement regime instead of the multiple ones in place today and include a flexible element that may present opportunities to align more to the dynamic environment of innovation.

<sup>24</sup> https://www.securityandpolicing.co.uk/

<sup>25</sup> Formerly the Academic Resilience and Security Community, NSEC is a network of universities formed to promote academic engagement in solving challenges in national security and resilience.

<sup>26</sup> https://www.crowncommercial.gov.uk/agreements/RM6126

#### Our partners - working better, together

- **33.** We will collaborate more closely across the range of our RDI partnerships below, **focussing on addressing our mission challenges and building S&T capabilities**, whilst considering sustainability across all our interactions.
- **34.** We will capitalise on this renewed focus through fresh opportunities for our collaborations with partners, including:
  - expanding our partner base we have been actively diversifying our RDI partner base, and will continue through commercial diversification strategies, consideration of new procurement routes, open competitions on top of our existing frameworks, and better leveraging existing R&D
  - engaging suppliers through multiple channels we will seek out engagement opportunities through existing and new routes, across all sizes of organisations
  - being more agile with our commercial partnerships, exploring better working with partners to iterate requirements if the environment or technology changes
  - exploring how we manage our funding more flexibly, and in ways to stimulate innovation and collaboration
  - **supporting co-creation of R&D programmes**, through promoting a trusting and permissive environment of collaboration.

### Our partnerships

#### **UK** government departments and agencies

- **35.** We leverage joint expertise and streamline efforts through RDI collaboration across government departments and agencies.
- **36.** A key strategic RDI delivery partner is Dstl, an Executive Agency of the MOD and part of the Public Sector Research Establishment network.<sup>27</sup> This partnership brings strategic opportunities for the Home Office, Dstl, and wider Defence. It enables us to pull through relevant aspects of MOD research, while supporting Defence in accessing Home Office research and innovation facilitating greater cross-government RDI efficiency and value for money.

<sup>27</sup> https://www.gov.uk/government/organisations/defence-science-and-technology-laboratory

# **Case study: Deepfake Detection Challenge**

The Home Office led the 'Deepfake Detection Challenge' in collaboration with the Department for Science, Innovation and Technology, the Alan Turing Institute, and ACE. This collaborative approach brought together experts from government, industry, academia, international partners and big tech to carry out fast paced, phased work to assess the current situation, determine existing capabilities and identify gaps requiring innovative approaches and novel solutions for detecting deepfakes.

The challenge has helped stimulate the sector, encouraging collaboration and driving world leading innovation to tackle high priority AI-enabled harms. It has provided vital evidence to government about where investment in capabilities should be prioritised. The UK is positioning itself to combat a rapidly escalating global threat, helping to safeguard vulnerable victims and pave the way for a safer, more secure, digital future for the UK.

#### **Operational partners**

- **37.** We work closely with operational partners, like within policing. These partners provide the frontline view and opportunities for testing and trials of research that is within the Home Office's areas of responsibility.
- **38.** The government CSA network is also crucial to us where there are common challenges across government departments and agencies. Particularly we maintain a strong relationship with the CSA for National Security, and the Policing CSA.<sup>28</sup> The Policing CSA is responsible for operationally independent aspects of policing, to deliver S&T within policing to cut crime and protect the public and police officers.

#### Academia and science advisory bodies

- **39. Academic research bodies** support our direct collaboration with academia, often with or through UKRI. These include:
  - the Centre for Research and Evidence on Security Threats (CREST)

     the UK's hub for behavioural and social science research into security threats.<sup>29</sup>
  - the Centre for Emerging Technology and Security (CETaS) at the Alan Turing Institute – the UK's national institute for data science and AL<sup>30</sup>
  - NSEC, which promotes academic engagement around security and resilience challenges.
- **40. Advisory bodies** provide expert scientific advice to the Home Office, and challenge and strengthen the evidence supporting our decision making. This includes the **Home Office Science Advisory Council**, and four other science advisory bodies, two of which the Advisory Council on the Misuse of Drugs (ACMD) and Animals in Science Committee have roles set out in Acts of Parliament.<sup>31,32</sup>

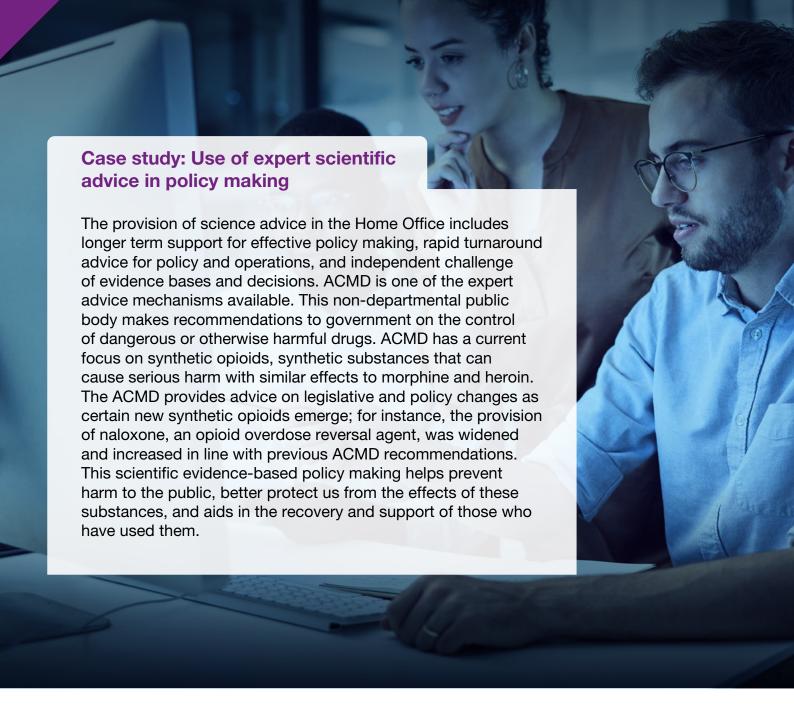
<sup>28</sup> https://science.police.uk/about/chief-scientific-adviser/

<sup>29</sup> https://crestresearch.ac.uk/

<sup>30</sup> https://cetas.turing.ac.uk/

<sup>31</sup> https://www.gov.uk/government/groups/home-office-science-advisory-council

<sup>32</sup> The ACMD, https://www.gov.uk/government/organisations/advisory-council-on-the-misuse-of-drugs, Age Estimation Science Advisory Committee, https://www.gov.uk/government/groups/age-estimation-science-advisory-committee, Animals in Science Committee, https://www.gov.uk/government/organisations/animals-in-science-committee, and the Biometrics and Forensics Ethics Group, https://www.gov.uk/government/organisations/biometrics-and-forensics-ethics-group.



#### Industry

**41.** We recognise the importance of collaborating with industry on the whole range of RDI to help deliver for our mission challenges. This can be directly, through organisations like DASA, JSARC and ACE, or with trade associations and sector alliances like ADS, Tech UK, and the Security and Resilience Industry Suppliers Community (RISC). 33,34,35 The Home Office values the expertise, different perspectives and agility that our industry partners can show.

<sup>33</sup> https://www.adsgroup.org.uk/

<sup>34</sup> https://www.techuk.org/

<sup>35</sup> https://www.riscuk.org/

### **Case study: Learning from our industry partners**



Innovation Zone at the Security and Policing event. A focus of the JSaRC-led Security and Policing event is to meet and discuss the latest advances in national security and resilience. In 2023, Home Office RDI teams collaborated with JSaRC to launch an Innovation Zone at the event to bring together government, industry, academia and international partners to discuss how RDI can help solve the latest security and policing challenges. Due to its success, the zone has now become

a permanent feature, providing us with a platform to discuss our RDI challenges, understand the interests of industry and academia, and discuss opportunities for possible partnerships and collaboration – across all our mission challenges.

Understanding complex technology through supplier showcases. Technologies such as knife detection, Al and facial recognition, can help the police and other agencies in boosting their productivity and cutting crime – and support across a range of mission challenges, including prevention, protection and intelligence and investigation. These are complex, requiring consideration of how they are developing but also how they can be deployed, and we therefore need to gather expertise from partners. We hold supplier showcase events to aid this. These provide a platform for partners to demonstrate their latest technology, promote increased awareness, and encourage discussions on the direction of the innovations, future collaborations and the operational context.

# Case study: Collaborating with industry to address online threats

Fraud accounts for around 40% of all crime in England and Wales, with most frauds now perpetrated, or facilitated, inpart online. In November 2023, the UK government joined forces with leading technology companies – Amazon, eBay, Facebook, Google, Instagram, LinkedIn, Match Group, Microsoft, Snapchat, TikTok, X (formerly Twitter) and YouTube – to develop and commit to the Online Fraud Charter, a voluntary commitment and the first agreement of its kind in the world. In short it means working together to protect the public from online fraud and prevent associated harms.

Services have committed to bring in a raft of measures to help protect people from fraud and scam content when using their sites. Actions include verifying new advertisers, promptly removing fraudulent content, and increasing levels of verification on peer-to-peer marketplaces. The charter will set the foundations for continued collaboration between government and technology companies, including around horizon scanning to stay ahead of the threat – and helping us build our Futures and foresight S&T capability.

<sup>36</sup> https://www.gov.uk/government/publications/online-fraud-charter-2023

#### International

- 42. We value the importance of building international relationships through collaboration with those countries that have a strong track record in delivering innovative science and technology solutions to public safety and security challenges. Our RDI collaborations are based on trusted enduring partnerships, offering opportunities to harness international expertise to address shared challenges. These engagements can be through knowledge exchange, co-funded joint activities and partnerships in international RDI programmes. We engage with strategic partners, building communities of interest, and demonstrating UK leadership and a coherent voice with our allies. We also identify where there are innovations that can be shared for mutual benefit and share the burden of R&D. We collaborate through:
  - **bilateral partnerships**, we cooperate globally with a range of international RDI partners.
  - multilateral groupings, such as the Five Country Ministerial Nations, who we collaborate with on issues such as countering violent extremism and child sexual exploitation.<sup>37</sup>
  - Horizon Europe on behalf of the UK security research community, the Home Office leads engagement with the EU in this programme, which offers the opportunity to work with an extensive international research network providing €1.8 billion of funding to directly support a range of security research topics

# Action: Strengthen our international RDI collaboration

We will evolve our strategic approach to international engagement, broadening and deepening RDI activities with existing international partners where we can add value to delivering joint objectives, and expanding our range of international RDI partners to best deliver for the Home Office.

# Case study: Horizon Europe – International Collaboration

The UK's agreement on association with the EU's Horizon Europe framework programme, is a positive and significant alignment that delivers multiple benefits for UK researchers and innovators across numerous thematic sectors. It provides an exciting opportunity for the Home Office to engage and strengthen collaborative relationships with European and wider member states and R&D leaders to identify shared areas of interest which align with our strategic priorities. The Home Office is already playing an integral role within Horizon Europe projects and will continue to engage and work across government departments to ensure key civil security priorities are included in future EU funding programmes. We are working closely with UKRI and InnovateUK, and the European Commission to actively promote, support and increase participation from industry, academia, research organisations, local government, practitioner end-users and policy teams.

An example of the Horizon funded projects that the Home Office are involved with include CYCLOPES, whose aim is to establish a network of stakeholders across Europe, with a wide range of experience in the field of fighting cybercrime. The Home Office is a consortium partner of this and leads 'Practitioner Workshops'. These are at the heart of the project and help identify the capabilities, gaps and requirements of European Law Enforcement Agencies across Cybercrime domains. The impact of CYCLOPES includes strengthened law enforcement agency networks, the sharing of best practices across nations, and engagement with academia and industry.



# 6. Measuring success

- **43.** We will provide dedicated resource to realise the strategy and set out what we want to explicitly deliver in an implementation plan.
- **44.** We will monitor and evaluate progress against achieving the actions and ambitions set out in the strategy (an overview is in Annex A), aligning them with Home Office outcomes. As part of this, we will create a way to systematically evaluate the wider RDI system in the Home Office, based on HM Treasury guidance.<sup>38</sup> We will communicate our progress and report against our goals, and be held accountable by Ministers.
- **45.** Throughout, we will regularly review the operating environment to determine whether we need to update this strategic approach to RDI.

<sup>38</sup> For instance, the Magenta Book on evaluation (https://www.gov.uk/government/publications/the-magenta-book).

# **Annex A: Strategy commitment and action summary**

Commitments	Actions
Culture of innovation Commitments 1 and 2	<ul> <li>Enhance the Home Office's approach to open science and research publication.</li> <li>Strengthen the Home Office's communication of RDI, including through setting up a new RDI presence on GOV.UK.</li> <li>Embed the principles for building our culture of innovation across the Home Office's work.</li> <li>Strengthen the co-ordination and oversight of research integrity in</li> </ul>
	the Home Office, including through reviewing our existing processes.
Challenge-led	<ul> <li>Develop and launch the Home Office RDI mission challenges.</li> </ul>
Commitment 3	Provide regular review and updates to the Areas of Research Interest.
Capability-driven	Implementation of a new RDI delivery model.
Commitments 4 to 8	<ul> <li>Build a set of enduring S&amp;T capabilities to drive forward solutions to our mission challenges.</li> </ul>
	<ul> <li>Build programmes of RDI around our S&amp;T capabilities, focussing each to deliver for our mission challenges, supported by RDI roadmaps.</li> </ul>
	<ul> <li>Improve the use of futures, foresight and horizon scanning outputs to better support Home Office long-term strategic planning and our decision-making processes.</li> </ul>
	<ul> <li>Explore options for putting in place more multi-year funding arrangements for R&amp;D programmes.</li> </ul>
	<ul> <li>Develop monitoring and evaluation processes to analyse the impact of our RDI investment and interventions.</li> </ul>
	<ul> <li>Broaden the breadth and depth of our expert communities focussed on RDI priorities, and draw together expertise to provide advice and challenge.</li> </ul>
	<ul> <li>Develop a new innovation service to pull through innovations into operational use more effectively.</li> </ul>
Collaboration	Create new engagement and collaboration opportunities.
Commitments 9 to 11	<ul> <li>Do more to broaden and deepen our RDI activities with existing international partners, and explore expanding our range of international RDI partners, to best deliver for the Home Office.</li> </ul>

