# Feasibility Trials
# Self-enrolment of Biometrics

## Request for Expressions of Interest (EOI)

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# 1. Background

The Home Office is transitioning its identity enrolment and verification capability to be completely digital and unsupervised over the next decade. From 2023 this will begin with cohorts that currently do not provide biometrics and will not be required to attend a physical location to enrol. To achieve this, the Home Office has a number of cross cutting workstreams aligning to this transition to ensure the benefits are realised on a value for money basis. These workstreams include the:

1. Biometric self-enrolment feasibility trials, that will assess the technical feasibility of moving towards unsupervised remote biometric capture, which this EOI seeks to address in more detail;
2. Future Borders and Immigration System (FBIS) Programme responsible for driving and delivering current digital identify enrolment and verification capacity and services, Global Identity Verification; and
3. Future Supplier Services (FSS) Programme responsible for integrating and enabling the transition of current manual processes to digital identity enrolment and verification services in partnership with FBIS, for customer cohorts who currently provide fingerprints in supervised locations.

The use of innovative self-enrolment capabilities to enable customers to self-enrol their biometrics using existing technologies like smartphones or other emerging technologies and methods to read identity documents as well as capture facial images and fingerprints is considered a desirable direction of travel. Any future solution must be convenient for applicants and able to be rolled-out at scale. The Home Office envisages a combination of two solutions: one that can be downloaded on widely available personal devices (i.e. smartphone or tablet) and another that allows applicants to self-enrol their biometrics through unsupervised static biometric capture equipment. For the purpose of this exercise, unsupervised static biometric capture equipment could be self-service kiosks; however, any other innovative solutions will be considered.

A Request for Information (RFI) was issued in March 2020 for input on how self-enrolment of biometrics may work. The RFI also covered Presentation Attack Detection[1] (PAD) and binding the captured biometrics (face and fingerprints) to a person's identity. A good variety of responses were received reflecting the current and future maturity of capabilities. The analysis of the responses has identified a number of aspects that require further development and confirmation of capability through feasibility trials. The capabilities ranged from mature (such as reading and authenticating the chips on travel documents), to not being able to demonstrate the capability at the scale required by the Home Office (such as the self-enrolment of

[1] Presentation Attack Detection (PAD) software is responsible for detecting intentional or unintentional attempts to subvert or spoof the system (e.g. through fingerprint moulds or a face mask etc.).

genuine biometrics at the required quality) and through to immature (binding biometrics to an identity).

The feasibility trials will assess the technical feasibility of capturing biometrics (face and fingerprints) in an unsupervised environment in a secure way only. No contracts or procurements will be issued as a direct result of this activity. Respondents should be aware that there are no guarantees that taking part in this activity will result in any future business, contracts or procurement from HMG or partners. However, this activity may inform the Home Office's approach.

# 2. Primary Concerns

The Home Office has identified four primary concerns with biometric self-enrolment and is looking to further qualify how technology and capabilities address these concerns.

- Self-enrolment of the best quality biometrics (as defined by the Home Office Biometric Standards)
- Biometric quality assessment and feedback
- PAD to prevent fraudulent and inadvertent activities
- Binding the face and fingerprint biometrics to the person's identity (simply referred to as *binding* hereinafter).

The biometrics of interest are face and fingerprints. The biometrics will be captured from a mix of personal devices and unsupervised static biometric capture equipment. Whilst unsupervised static biometric capture equipment can be designed to the Home Office's needs, there are a multitude of available personal devices that cannot be specifically tailored for biometric enrolment.

Of paramount importance to the Home Office is to ensure the matching performance of self-enrolled biometrics is as good as or better than the existing methods. The Home Office wants to maintain the high value of its biometric galleries over time without any degradation.

# 3. RFI Findings

The RFI responses from March 2020 were analysed in the context of the primary Home Office use case of enrolment for visits and migration at a high scale. The number of enrolments per year is expected to greatly increase in the future. The enrolled biometrics will be subject to many searches from different lines of business. Although the Home Office is exploring innovative solutions across personal devices and unsupervised static biometric enrolment equipment in these trials, the RFI looked specifically at Smartphone and unsupervised self-service kiosk capabilities as two common self-enrolment approaches. The key findings were:

1) Self-service kiosks have the potential maturity to capture biometrics to the required quality. Self-service kiosks are more adaptable to meet specific requirements and represent a more controlled capability.

2) Face capture and quality is gaining maturity across self-service kiosks and Smartphones. There is considerable industry led research and development to improve the reach and effectiveness of face capture, quality and matching performance.

3) Self-service kiosks have the potential maturity to capture good quality fingerprints, due to their flexible and adaptable nature.

4) There remain many unquantified concerns for the capture of contactless fingerprints with Smartphones. The concerns include lens distortion, the ability to accurately determine scale, the ability to capture thumbs and the area of fingerprint detail. There are similar concerns with face capture, but to a lesser extent.

5) There is no common standard way of determining whether a Smartphone can be certified to capture fingerprints. This contrasts with the FBI Appendix F certification for contact fingerprint readers.

6) There is no common accepted means of determining the quality of contactless captured fingerprints on a Smartphone. The exiting NFIQ standard is not fully representative of contactless captured fingerprints.

7) The effectiveness of PAD at different levels of attack is unquantified for the scale required by the Home Office. This is relevant to both face and fingerprints across self-service kiosks and Smartphones.

8) It is difficult to confidently bind the biometrics with a person's identity. Binding is essential to fix an identity and to trust that identity through a person's user journey.

9) There were no fully robust solutions to achieve binding. There were some ideas that may be applied on self-service kiosks but little that would be achievable on a Smartphone.

10) The effectiveness, efficiency and inclusiveness of biometric matching performance is undetermined. Empirical data needs to be collected and compared against controlled data across Supplier, device, environment and demography.

# 4. Introduction to the Feasibility Trials

The analysis of the RFI responses has identified a number of aspects that require further development and confirmation of capability through feasibility trials. The feasibility trials will be an opportunity to test the available technology and collect data to determine the matching performance of self-enrolled biometrics.

## 4.1 Objectives

The objectives of the feasibility trial are multi-faceted.

1) Demonstrate how biometrics can be self-enrolled with sufficient quality across different personal devices, in different environments with a diverse set of donors.
2) Demonstrate the effectiveness of contactless fingerprint quality assessment algorithms.
3) Demonstrate how effective PAD is in determining genuine and non-genuine biometrics using client and server-side techniques at Home Office scale.
4) Demonstrate the effectiveness of binding techniques.

The trials shall demonstrate supplier capability across devices, environmental factors and demography. The data collected at the trials will be used to assess the effectiveness, efficiency and inclusiveness of matching performance.

## 4.2 Roles

This EOI is for the potential industry suppliers who will be participating in the Feasibility Trials as the 'Capture Supplier'.

**Capture Supplier –** the suppliers who are providing the biometric capture, PAD and possibly binding capabilities. There are expected to be multiple suppliers providing a combination of capabilities.

For context, there will be the following supporting roles to facilitate the trials:

**PAD Tester**– the tester who conducts the presentation attacks and tests the effectiveness of the PAD capability provided by the capture Suppliers. There is expected to be only one PAD Tester.

**Trial Organiser -** the Home Office will be hosting the trials and will provide the necessary delivery resource. This EOI does not cover the details of who is managing the trials, the logistics of how the trials will be run or how the collected data will be analysed for matching performance.

## 4.3 Feasibility Trials Approach

The information provided here represents an outline of the proposed operation. Further details of the trials will be provided later in 2021.

There are two parts to the Feasibility Trials:

1. **The Capture Trial** - the self-enrolment of biometrics with associated quality and PAD assessment together with any binding capability. Capture Suppliers shall provide the implementation of the required capabilities.

2. **The PAD Trial** – an evaluation of the effectiveness of PAD using presentation attack instruments[2] (PAI). The PAD Tester shall be responsible for the evaluation of the capture Suppliers' PAD capabilities.

It is anticipated that the trials will take part in the UK over a number of days during a one-week period (in October - December 2021).

The Organiser shall recruit donors of biometrics for the capture trial. The donors shall be representative of those people who apply to come to the UK. A selection of personal devices (Android and iOS based) shall be provided by the Organiser to load up Supplier applications. Suppliers shall provide their own unsupervised static biometric capture equipment solutions.

Donors shall self-enrol on all Supplier applications. Enrolments shall be assessed for quality and PAD effectiveness. Binding will also be assessed where possible. The captured data shall be analysed and evaluated by the Home Office.

The PAD trial will be run in parallel to the capture trials. The data obtained from the capture trial shall be used as the background data set. The PAD Tester shall prepare attack instruments and run the attacks against the data using the PAD capabilities provided by the capture Suppliers. The PAD data will be used by the PAD Tester for analysis.

## 4.4 Capture Capabilities Overview

Table 1 summarises the capture Supplier capabilities to be demonstrated across the capture trial for unsupervised static biometric capture equipment and personal devices. The priorities of the capabilities are provided in MoSCoW style. The priorities indicate what one Supplier is expected to provide for an implementation for the self-capture of biometrics.

[2] Presentation Attack Instruments (PAI) are a biometric characteristic or object used in a presentation attack. Instruments can be artificially produced or be a substitute biometric from another person.

| Capability to demonstrate | Unsupervised static biometric capture equipment | Personal device |
|---|---|---|
| Face Capture | Must | Must |
| Face Quality Assessment | Must | Must |
| Face client-side[3] PAD | Must | Must |
| Fingerprint Capture | Must | Must |
| Fingerprint Quality Assessment | Must | Must |
| Fingerprint client-side PAD | Could | Could |
| Face server-side[4] PAD | Could | Could |
| Fingerprint server-side PAD | Could | Could |
| Binding biometrics to identity | Should | Could |

**Table 1 - Demonstrable Capabilities across unsupervised static biometric capture equipment and personal devices**

### 4.4.1 Unsupervised Static Biometric Capture Equipment Capabilities

The Supplier shall provide unsupervised static biometric capture equipment to fulfil all the mandatory capabilities. The Supplier may provide any or none of the non-mandatory requirements for the implementation of unsupervised static biometric capture equipment.

If a Supplier does not have the technology to participate in the unsupervised static biometric capture equipment capture trial but has the PAD capability, we would encourage them to participate in the PAD section of the trials.

The Supplier is also asked to demonstrate their capability to assess the confidence of whether the face and fingerprints captured can be bound back to the donor. Even if the Supplier has no current capability to demonstrate binding, the Supplier is encouraged to consider how this could be developed and built into their solution.

### 4.4.2 Personal Device Capabilities

Since the personal device will be provided by the Trial Organiser, there are a combination of ways a Supplier's capability may be demonstrated. The Trial Organiser shall install a Supplier's capability on the personal device.

Table 1 shows two capture variants: one for face and one for fingerprints. Suppliers shall supply capture capability that addresses, one or both of these variants.

A Supplier may provide any or none of the remaining optional requirements. If a Supplier does not have the technology to participate in the personal device capture

[3] Client side is where an operation takes place at the front end on the device or application itself.
[4] Sever side is where an operation is deferred to a separate backend process.

trial but has the PAD capability, we would encourage them to participate in the PAD section of the trials.

The ability to bind the biometrics to the donor's identity is considered to be too immature with personal devices. Any insights Suppliers have on the capability are desirable and would be welcomed.

# 5. Biometric Enrolment Approach

The primary goal of the biometric capture trial is to test the quality and matching performance of self-enrolled biometrics. The Trial Organiser will collect a set of reference biometrics using a universal solution based upon traditional supervised capture techniques using a single lens reflex camera for faces and an optical fingerprint block.

Donors will self-enrol their biometrics on all Supplier solutions on different devices across a set of environments. For each self-enrolment, quality and PAD scores will be collected, together with any binding confidence scores. Fingerprint quality scores shall include NFIQ 2.0 scores. If a Supplier uses a proprietary quality algorithm, the Supplier shall declare the identity of the algorithm and provide its quality score.

Biometric and score data (quality, PAD and binding) shall be tagged by Supplier, device, environment and donor. The Home Office will be the Information Asset Owner. As such, data shall be extracted for Home Office consumption. After extraction, the data shall be deleted from the capturing devices according to a procedure to be defined.

# 6. PAD Approach

The primary goal of PAD is to test the effectiveness of various presentation attacks on face and fingerprints using personal devices and unsupervised static biometric capture equipment. The PAD trial is a separate workstream from the capture trial. The donor biometrics will be used as a bone fide data set for PAD assessment.

Both client and server-side assessment will be tested, although it is admissible for a Capture Supplier to only offer one or the other. The Capture Suppliers shall provide the required PAD capabilities, but a separate PAD Tester shall conduct the PAD trials.

A number of attack types shall be defined representing the attack levels deemed appropriate for the Home Office. The instruments shall be prepared and used for presentation attacks against the various Supplier solutions by the PAD Tester.

PAD score data shall be tagged by capture Supplier, source (i.e. client or server), attack type, device, environment and donor. The Trial Organiser shall be responsible for PAD test data extraction and deletion.

The Home Office will be the Information Asset Owner of the data and will make the data available to the PAD Tester for evaluation. At the end of the trial, any PAD data on the capture devices shall be deleted. Data extraction, movement and deletion shall be according to a procedure to be defined.

# 7. Outputs

The results of the trials will identify the readiness for operational trials and further areas where vendors can improve their products.

The Home Office shall assess the biometric performance of the extracted data for effectiveness, efficiency and inclusiveness.

For the capture trial, the Home Office shall assess biometric performance of the supplied capture capabilities according to but not limited to:

- the false positive identification rate (FPIR)
- the false negative identification rate (FNIR)
- rank 10 performance against latent mark searches compared to contact prints.

The PAD test shall evaluate the PAD trial data according to but not limited to:

- the attack presentation classification error rate (APCER)
- the bone fide presentation classification error rate (BPCER).

Testing will be in line with the ISO standards for ISO-IEC 19795 for biometric accuracy and ISO-IEC 30107-3-2017 for PAD.

Any binding accuracy data shall also be analysed.

An Executive Summary of the findings from the trials shall be made available to Suppliers after the trial.

# 8. Capture Trial Requirements

This section provides the Capture Supplier requirements and any constraints associated with them. The constraints are for the Trial Organiser to meet and for Suppliers to be aware of.

## 8.1 Demographic Requirements

The Suppliers' capabilities are required to operate with a variety of biometric donors. The donors shall be recruited by the Trial Organiser.

The donors shall be male and female and be representative of a broad range of ethnicities. Family groups shall be catered for that include children from the age of five. It is permissible for a donor to be assisted in their enrolment.

8.1.1 The Supplier's capability shall enable the self-enrolment of all donor biometrics.

8.1.2 The Suppliers' capability shall not differentiate by any protected characteristics of a donor.

## 8.2 Environmental Requirements

The Trial Organiser shall simulate up to three different environments by varying lighting conditions to represent different indoor settings. The details of these environments will be specified at a later date.

8.2.1 The unsupervised static biometric capture equipment Supplier shall be aligned to the standard ISO/IEC 29197 2015 for the kiosk environment.

8.2.2 The capture Supplier's capability shall be made available in all environmental settings defined.

8.2.3 The unsupervised static biometric capture equipment supplier shall provide two to three kiosks to handle the number of enrolments within the different environmental settings.

## 8.3 Unsupervised Static Biometric Capture Equipment Requirements

Each capture of a donor's biometric is expected to be a genuine enrolment. No exception or exemption use cases are expected.

8.3.1 The Supplier shall provide two or three of their own installations.

8.3.2 The Supplier shall fully install the solution with the associated capture, PAD and binding capabilities. Client-side face PAD is mandatory but other PAD techniques and binding are optional, depending on the Supplier solution.

8.3.3 The Supplier shall provide training to the Trial Organiser to allow the Trial Organiser to support the trial.

8.3.4 The Supplier shall provide the necessary biometric and non-biometric peripherals.

8.3.5 The Supplier shall adhere to the published Home Office biometrics quality standards for face and fingerprint capture.

8.3.6 The Supplier shall capture a full-frontal face.

8.3.7 The Supplier shall assess the quality of the face using ICAO standards.

8.3.8 Face feature quality scores shall be used to help provide targeted user feedback.

8.3.9 The Supplier shall capture NFIQ 2.0 fingerprint quality scores.

8.3.10 The Supplier may use a proprietary fingerprint quality assessment algorithm. The Supplier shall capture the quality score and declare the algorithm used.

8.3.11 There shall be a single quality score for each finger.

8.3.12 Fingerprint feature quality scores shall be used to help provide targeted user feedback.

8.3.13 The Supplier shall capture 10 plain fingers.

8.3.14 The Supplier may segment the captured fingers into 10 separate fingerprint images.

8.3.15 The Supplier shall provide client-side face PAD that includes liveness detection.

8.3.16 The Supplier may provide server-side face PAD that includes liveness detection, if available.

8.3.17 The Supplier may provide client-side fingerprint PAD that includes liveness detection, if available.

8.3.18 The Supplier may provide server-side fingerprint PAD that includes liveness detection, if available.

8.3.19 The Supplier shall capture a face PAD score and indicate whether it was considered a pass or fail without notifying the enrolee, if available. The information shall not be displayed to the enrolee.

8.3.20 The Supplier may capture a fingerprint PAD score and indicate whether the enrolee passed or failed, if PAD is available. The information shall not be displayed to the enrolee.

8.3.21 The Supplier may capture a binding confidence score.

8.3.22 An end-to-end transaction shall take no more than five minutes. The transaction is defined from the start of the donor enrolment to the completion.

8.3.23 The Supplier shall collect the biographic data, biometric data, biometric quality scores, PAD scores, binding confidence scores and transaction time associated with each enrolment. The data shall be collected in a common format to be defined by the Home Office.

8.3.24 The Supplier shall destroy all captured data at the end of the trial and provide a data destruction certificate. The certificate shall be a CPA assured disk erasure produce such as https://www.ncsc.gov.uk/products/blancco-drive-eraser-6

8.3.25 The data destruction certificate shall be handed to the Trial Organiser as a pre-condition to the unsupervised static biometric capture equipment leaving the facility.

8.3.26 The Supplier shall provide assurance of the unsupervised static biometric capture equipment's security credentials (ideally a CHECK config review to assure malware, access and exfiltration-prevention controls).

## 8.4 Personal Device Requirements

The Trial Organiser shall specify and provide the personal devices to be used. The personal devices shall be a mix of Android and iOS devices issued over the last five years. Up to 10 different personal devices shall be made available.

The Trial Organiser shall load the Suppliers' capability onto the devices and provide access to any required server-side components. The Organiser shall assure the enrolment app and its connections are secure.

The Trial Organiser shall measure the transaction times of each donor enrolment.

All capture scenarios are expected to be genuine enrolments. No exception or exemption use cases are expected.

Since separate face and fingerprint capture capability may be provided by more than one Supplier, the requirements are further separated out by face and fingerprints.

Face Capture Requirements

8.4.1 The face capture Supplier shall provide the capability for a donor to self-enrol and assess PAD, if PAD is available.

8.4.2 If the Supplier is providing PAD, the Supplier shall specify whether their PAD is client-side, server-side or both.

8.4.3 The face Capture Supplier shall make their capture and/or PAD application available to the Trial Organiser and support the Trial Organiser for their application to be loaded onto the personal device. The Supplier shall specify the best means of achieving this.

8.4.4 The Supplier shall adhere to the published Home Office biometric quality standards for face capture.

8.4.5 The Supplier shall capture a full-frontal face.

8.4.6 The Supplier shall assess the quality of the face using ICAO standards.

8.4.7 Face feature quality scores shall be used to help provide targeted user feedback.

8.4.8 The Supplier shall capture a face quality score and state the algorithm in use.

8.4.9 The Supplier may capture a client-side face PAD score. The score shall not be displayed to the enrolee.

8.4.10 The Supplier may capture a server-side face PAD score. The score shall not be displayed to the enrolee.

8.4.11 The Supplier shall indicate whether the enrolee passed or failed PAD. The decision shall not be displayed to the enrolee.

8.4.12 An end-to-end face capture transaction shall take no more than 3 minutes. The transaction is defined from the start of the donor face enrolment to the completion.

8.4.13 The Supplier shall provide the face image, quality scores, PAD scores and transaction time data by donor. The data shall be captured in a common format to be defined by the Home Office.

8.4.14 The face capture Supplier shall provide the security credentials of any required server-side components (ideally a CHECK config review to assure malware, access and exfiltration-prevention controls).

At the end of the trial, the Trial Organiser shall extract the biographic data, biometric data, biometric quality scores, PAD scores and transaction time associated for each enrolment. The Trial Organiser shall ensure all data is deleted and handled according to defined procedures.

Fingerprint Capture Requirements

8.4.15. The fingerprint capture Supplier shall provide the capability for a donor to self-enrol and assess PAD, if PAD is available.

8.4.16. If the Supplier is providing PAD, the Supplier shall specify whether their PAD is client-side, server-side or both.

8.4.17. The fingerprint Capture Supplier shall make their capture and/or PAD application available to the Trial Organiser and support the Trial Organiser for their application to be loaded onto the personal device. The Supplier shall specify the best means of achieving this.

8.4.18. The Supplier shall adhere to the published Home Office biometric quality standards for fingerprint capture.

8.4.19. The Supplier may provide a proprietary quality capture score as an interim until a common standard is developed and adopted. It is recognised there is no agreed standard for contactless fingerprint capture.

8.4.20. There shall be a single quality score for each finger.

8.4.21. Fingerprint feature scores shall be used to help provide targeted user feedback.

8.4.22. The Supplier shall capture 10 plain fingers.

8.4.23. The Supplier may segment the captured fingers into 10 separate fingerprint images.

8.4.25. The Supplier may capture a client-side fingerprint PAD score. The score shall not be displayed to the enrolee.

8.4.26. The Supplier may capture a server-side fingerprint PAD score. The score shall not be displayed to the enrolee.

8.4.27 The Supplier shall indicate whether the enrolee passed or failed PAD. The decision shall not be displayed to the enrolee.

8.4.28. An end-to-end transaction shall take no more than three minutes. The transaction is defined from the start of the donor fingerprint enrolment to the completion.

8.4.29. The Supplier shall collect the fingerprint images, quality scores, PAD scores and transaction time data by donor. The data shall be captured in a common format to be defined by the Home Office.

8.4.30. The Supplier shall provide the security credentials of any required server-side components (ideally a CHECK config review to assure malware, access and exfiltration-prevention controls).

At the end of the trial, the Trial Organiser shall extract the biographic data, biometric data, biometric quality scores, PAD scores and transaction time associated for each enrolment. The Trial Organiser shall ensure all data is deleted and handled according to defined procedures.

# 9. PAD Test Trial Requirements

The PAD trials shall be a separate workstream and run in parallel to the capture trial. The Capture Suppliers shall provide the PAD capability and the PAD Tester shall test and evaluate the PAD capability.

The detail level of PAD testing shall be determined by the Home Office's risk appetite. The bone fide capture trial data set shall be used to conduct the PAD tests. The PAD Tester shall cover the defined attack levels using PAI they have prepared. Face morphing will not be tested.

Any reference to PAD capability refers to face and fingerprint PAD unless specifically stated.

9.1.1. The Supplier shall provide client-side or server-side PAD capability or both. The implementation of the PAD capability shall be a continuation of the capture trial. It is admissible for a Supplier to provide a PAD only server-side capability that was not demonstrated in the capture trial. In this case the Supplier shall work with the Trial Organiser to implement the capability.

9.1.2. The Supplier shall provide guidance to the PAD Tester in the operation of the Supplier's PAD capability.

9.1.3. The Supplier shall provide support and assistance for their capability to the Trial Organiser and PAD Tester.

9.1.4. The Supplier shall capture the PAD scores in a common data format to be defined by the Home Office.

9.1.5. The unsupervised static biometric capture equipment Supplier shall extract the PAD data from the unsupervised static biometric capture equipment according to data procedures to be defined.

9.1.6. The unsupervised static biometric capture equipment Supplier shall pass the extracted PAD data to the Trial Organiser according to data procedures to be defined.

9.1.7. The unsupervised static biometric capture equipment Supplier shall destroy all captured data at the end of the PAD trial and provide a data destruction certificate. The certificate shall be a CPA assured disk erasure produce such as https://www.ncsc.gov.uk/products/blancco-drive-eraser-6

9.1.8. The unsupervised static biometric capture equipment Supplier shall hand the data destruction certificate to the Trial Organiser as a pre-condition to the unsupervised static biometric capture equipment leaving the facility.

9.1.9. The personal device Supplier shall allow the PAD data to be extracted from the personal device by the Trial Organiser according to data procedures to be defined.

# 10. Questions for Suppliers to answer

## 10.1 Guidelines for completing the EOI

Please ensure you utilise the 'Save and continue' feature of this online portal. Please be aware, you may need to add 'noreply@smartsurvey.co.uk' to your trusted senders list to avoid the saved survey link going into your spam or junk folder.

It is advised to test the 'save and continue' feature once you have put in your personal details, to ensure you do not complete a large portion of the EOI and lose your work due to an error.

Copies of your responses will not be provided by the Home Office and you should retain a copy of your own response. You can also use the 'Print Response' feature on the final page of the survey, if required.

## 10.2 Survey Questions

By completing the survey, you are confirming that you wish to take part in the trials and that you will be ready for trials to commence in the UK between October-December 2021.

**Introduction**

Q1. Please confirm you have read the Requirements and Disclaimer in the accompanying document (note: this question is in reference to the reading of this document)

Section 1 – **About your organisation**

Q1. Organisation details
   a. Name
   b. Address of organisation headquarters

Q2. Business representative contact information
   a. Name
   b. Email address
   c. Telephone number

Q3. Technology representative contact information
   a. Name
   b. Email address
   c. Telephone number

Q4. How long have you been operating in the biometric arena?

Q5. How do you define your organisation?

Q6. Please indicate what you would hope to gain from participation in the evaluation?

Q7. Please indicate which elements of the trial you wish to participate in: (select all that apply)
   a. Personal device face enrolment and PAD
   b. Personal device finger enrolment and PAD
   c. Unsupervised static biometric capture equipment face & finger enrolment and PAD
   d. Server-side PAD

**The following questions will be replicated across each of the four trial elements listed above in Section 1:Q7 – with some questions omitted for: 'c. Unsupervised static biometric capture equipment face & finger enrolment and PAD' and: 'd. Server-side PAD'.*

Section 2 – **Overview of the Enrolment System**

Q1. Please provide examples of your use case and workflow. You may upload up to 2x graphs or diagrams on your workflow and/or use case in the following formats: JPG or PNG.

Q2. Please outline your minimum Hardware Description e.g. – cameras, sensors or other necessary equipment.

Q3. Please confirm the compatibility with iOS 2015 onwards.

Q4. Please confirm the compatibility with Android Smartphone devices from 2015 onwards.

a. Please indicate if your solution has any specific network requirements, such as 4G, WIFI, minimum download/upload speeds.

b. Please indicate the footprint and power requirements of your kiosk solution.

Section 3 – **User interaction with the enrolment system**

Q1. Please outline the actions a user completes when performing a transaction.

Q2. Are there any instructions or feedback provided to users?

Q3. If you answered yes to the above, please specify what these are

Q4. Are there any known usability issues or concerns with your system?

Q5. If you answered yes to the above, are there any expected workarounds so that all users can complete a transaction with the system.

Q6. If available, please provide a URL (link) to a short (3min) demonstration video of the enrolment system in use. Provide accessibility details if required.

Section 4 – **Technical Readiness Level**
This section describes your assessment of your product's technical readiness.

Q1. What is the current Technology Readiness Level (TRL) of your product?

Q2. What will the TRL of your product be by October 2021?

Q3. Are there any known enrolment issues?

Q4. Has a third party integrated your system into a larger system?

Q5. if you answered yes to the above, please indicate how long this process took, in months.

Q6. Please provide information on any past or present operational deployments of your system

Q7. Please describe succinctly your algorithm's training methods to develop / measure the algorithm's performance over time. In your answer please highlight what data was used to train your system and where this data was sourced (private, open, etc)

Section 5 – **Estimates of performance**

Q1. Describe your anticipated performance against these key performance metrics of an effective system

a. Time to enrol
b. Identification of fraudulent use
c. Enabling of genuine use

Q2. Please provide information on the estimated failure to acquire rate and known processing issues (image size, pixels between the eyes, occlusion, pose, or gaze angle restrictions, etc.).

Q3. Please confirm if you have used randomised or matched demographic impostors when providing estimates.

Q4. Please outline differential performance between highest and lowest performing demographic groups.

Q5. Estimated transaction time to capture all the biometric information, in seconds (excluding reading passports etc)

a. Minimum
b. First Time User
c. Maximum

Section 6 – **System safety information**

Any system must be intrinsically safe for the public to use.

Q1. Please provide details of any safety conformance or independent safety testing that your system has undergone?

## 10.3 Questions from suppliers

Questions may be directed to JSaRC@homeoffice.gov.uk, before 11:59am on 29/01/2021. Emails should have 'Biometric Self-Enrolment EOI Questions' in the subject line of the email.

JSaRC cannot guarantee that questions received after the deadline will be responded to.

Please note that questions received over the festive period will NOT be responded to before 06 January 2021.

Any supporting information provided by email, such as brochures and PDFs will not be considered at this stage.

Please be aware questions submitted to JSaRC as part of the EOI response and answers to these questions may be published and are subject to the terms in the above disclaimer.

# 11. Evaluation Criteria

Respondents will be sifted for their participation in the Trials, based on their responses to this survey, specifically looking at:

a) If the product is of Technology Readiness Level (TRL) 6, by October 2021;
b) If your company is available to participate in a week-long trial in the U.K., from October – December 2021; and
c) The technology's alignment with the requirements set out in sections 8 and 9 of this document.

# 12. Timelines and next steps

The closing date for responses to this EOI is: 11:59am on 15/02/2021.

A Home Office Assessment Panel will then meet to review the responses and respondents will be contacted by JSaRC to inform them of the outcome of their EOI, by end of March 2021.

The Feasibility Trials are likely to be held between October - December 2021.

# 13. Disclaimer

This activity is for the purpose of trialling feasibility, only. No contracts or procurements will be issued as a direct result of this activity. Respondents should be

aware that there are no guarantees that taking part in this activity will result in any future business, contracts or procurement from HMG or partners. Additionally, participants will not receive any payment for their involvement in the trials. This market engagement (Feasibility Trials) does not constitute a selection or evaluation process of any sort and participation in the market engagement is not a pre-requisite for Supplier involvement in any subsequent procurement the Home Office may run for technology and services.

Timescales and planned dates in this Expression of Interest (EOI) document are indicative only and subject to modification or change by the Home Office in any subsequent briefings or procurement activity.

# 14. Confidentiality and publication of information

An Executive Summary of the findings of the Feasibility Trials may be shared publicly and/or with bidders of any relevant future procurement activity, as well as other Government Departments.

All information supplied to you by the Home Office must be treated in confidence and not disclosed to third parties.