



# Police National Database (PND)

## Facial searching guidance

Not for circulation outside of the PND user community.  
For police purposes this document should be treated as restricted.

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## 1. Introduction

This guidance has been produced to assist all PND users in using the facial searching function and in producing results from their searches. All PND account holders have had access to facial searching since April 2014.

PND now holds over 15 million custody photographs against which a 'probe' image can be compared.

Several forces are still in the process of uploading their images to PND while they ensure that they are retained and supplied in line with MOPI guidelines.

Details of forces which have not yet provided images can be found on POLKA.

## 2. Preparing an image for a search

### 2.1. Images

All types of facial images can be considered for a PND search, however the type of image its size and background are critical to obtaining a result.

Staffordshire experimented with searches on old custody images, CCTV and images taken on surveillance cameras with some success.

All images used in this guide have been redacted.

**Example:** Facial search can be used on facial images found in fraudulently obtained documents in order to

assist in identifying perpetrators. Often the only genuine detail on such documents is the facial image.

### 2.2. Size and format of 'probe' images

The image must be 500kb or less in size to be accepted.

The number of pixels between the subject's pupils must be at least 10% of the total width of picture.

The image should only contain one face, and the person should be facing the camera.

The system can accept a number of file types, including most image formats, namely .jpg (or .jpeg), .bmp, .thm

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or .png, but it is also possible to search on a document which contains an image.

The 'probe' image needs to be in a folder that is accessible from your PND session – your force's system controls will apply.

2.3. Software tools for preparing images

Several software tools are available to use to prepare an image for a search when required. Microsoft Paint and Microsoft Picture Manager have proved successful and are usually readily available in a Windows environment.

2.3.1. The following is a typical CCTV image which could be searched against in order to generate lines of enquiry which might identify the offender. This image was taken from CCTV at a filling station.

S40

2.3.2. This image contains a lot of background information. The image must first be cropped in order to make it searchable. Using an appropriate software tool, such as those mentioned, the image needs to be cropped to a head or head and shoulders shot.

2.3.3. This is how the image should look before carrying out the search.

This was cropped using Paint, the headshot image was saved as a new document as a JPEG file. S40

2.3.4. The 'probe' image needs to be in a folder that is accessible from your PND session – your force's system controls will apply.

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### 3. Using Paint to prepare an image for facial searching

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Open Paint. You'll usually find it by clicking on the Start button / All programmes / Accessories.

Open your image in Paint.

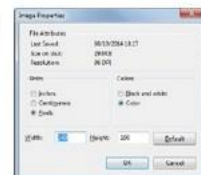
Click on the Select tool, and click and drag to frame the face you want to form the probe image.

S40 & S31.

Click on the File icon,  and then save the new, cropped image as a JPEG or similar, in a folder which is accessible from the PND browser. This can either be a Restricted or Confidential folder.

Remember that your image needs to be between 25kb and 500kb in size in order to be searchable.

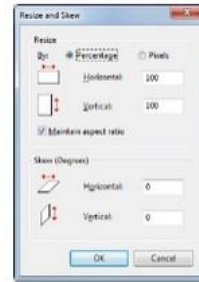
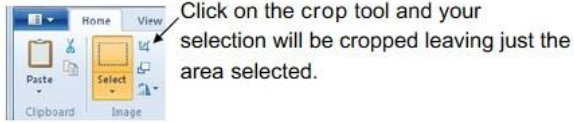
You can check the file size by clicking on the File icon and then on Properties.



If you need to reduce the size of the image, you will need to right click on the image and select resize.

Reduce the percentage Horizontal width as necessary, but ensure that the Maintain aspect ratio box is checked, else your image will be skewed and useless for facial search.

Smaller images will produce results but are unlikely to be accurate matches.



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## 4. Searching PND

### 4.1. Initial search criteria

Log into PND and complete the initial search criteria.

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Now click the **Continue** button.

### 4.2. Upload your file

This will take you to the next screen.

S31

Click the **Upload File** button.

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The **Choose File to Upload** window opens, and you may need to navigate to the document folder in which you saved your probe image. Again, this folder needs to be accessible from your PND session – your force's system controls will apply.

S31

Once you have reached your document folder, double click on the file that is your probe image.

Your probe image will appear on the PND search screen.

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Click on the **Search** button.

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4.3. Decide where to save your results  
The Select Save Folder window appears.

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This will submit your search and the Facial Search Success window will open.

S31

Click on the **OK** button.

Click on the folder in which you wish to save your results (in this case the SAVE folder), and then click on the **Continue** button.

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4.4. Understanding your results  
The PND Results List window will open.

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You will see that your search is running, and you can now carry out other searches.

When the result comes back it will either indicate **Failed** or **Saved**

**Failed** – does not mean it has failed to search, but that it has not found a match.

On your results screen, facial searches can show a status of **Failed** for three reasons. If you hover the cursor over the word **Failed**, the reason will be displayed, stating that:

- no match was found, or
- the probe image was too large, or
- no face was recognised within the probe image.

**Saved** – if your search successfully completes, the status changes to **Saved** and it means your search has found a match to your probe image.

The results will show the match groups containing images that matched against the facial search image. The image displayed will be the image that best matches the facial search image used.

#### 4.5. Viewing your results

Click on the **person** icon to view your results.

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The PND Results Set window opens.

The first image in this results set does not appear to be the person searched on. However, when, in this case, you view all 20 images you can see that a match has been found. S31

To bring the probe image searched on onto this screen for comparison, click on the **person** icon in the top of the screen.

## 5. FAQs

### 5.1. How does facial search work?

The software uses key points on the face and makes matches regardless of whether the person has aged, changed hairstyle, started wearing glasses and lost or gained weight.

### 5.2. Who can use facial search?

Facial search is available to all users of PND. It has been added to all users RBAC (role based access code).

### 5.3. My facial search says it has failed, why is that?

On your results screen, facial searches can show a status of 'failed' for three reasons. If you hover the cursor over the word 'failed', the reason will be displayed, stating that:

- no match was found, or
- the probe image was too large, or
- no face was recognised within the probe image.

### 5.4. Who can see my 'probe' image?

The 'probe' image you upload can only be seen by you and your Auditors.

### 5.5. Does the image I upload get imported into PND?

No, the 'probe' image is only available to you in that session. It is not stored in PND. While you can return to it during a session, you would have to upload it again if you wished to reuse it in another session.

### 5.6. Can I search on other search criteria at the same time?

Yes, you can add further information to the Person Search Criteria by populating the relevant fields.

### 5.7. What can I use facial search for?

Facial search is an intelligence tool that can be used for intelligence development purposes. It must not be used for formal photographic identification procedures.

### 5.8. Where can I find more information on facial searching and how to use it?

<http://elearning.pnd.pnn.police.uk/> is an online e-learning site open to anyone with a .pnn account. More information on facial searching is available in both the 'R3D1 high level briefing document' and in the 'Sophisticated Searches' e-learning module.

## 5.9. POLKA

Updated user guidance is available on POLKA:

<https://polka.pnn.police.uk/>

You will need a .pnn or .gsi account to register on the site.

You will find the user guidance in the **IMPACT: PND** Implementation community / Documents /

It is on the second page of documents and is called R3D1 PND Search User Guide.

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## 6. Facial search in action

A theft occurred in a bookmaker's in Durham where money was stolen from the till. The shop CCTV showed a man leaning over the counter and was presumed to be the suspect. Durham police conducted a PND Facial Search, the result of which suggested a possible lead.

Further enquiries showed this person had been arrested by Devon and Cornwall Police the week before and was known to Surrey Police. The image on PND had been loaded by Police Scotland the year before. An arrest package was sent to Surrey Police. The suspect was arrested, admitted the offence and was charged. He pleaded guilty in court and was sentenced to 6 weeks in prison and ordered to pay compensation to the bookmakers.

Thanks to Sean Byron, PND Business Lead and Alan Whalley of Staffordshire Police who developed this guidance and provided the examples given.

This document is available to forces to use as required to support the implementation and embedding of the Police National Database.

Any of the text may be used in publications, or it can be adapted to carry force branding and force specific messages.

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Facial Search – PND Users' How To Guide V1.0

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