

Face Recognition Pilot Installation Programme

Viseum iVOS F3 – Automatically Identifying People and Find, Fix and Follow Persons-of-Interest

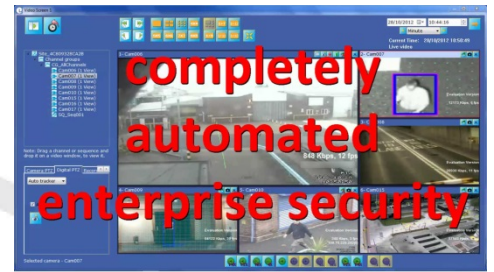
The strength of Viseum iVOS FaceRec video analytics software is in automatically identifying people, and finding and following persons-of-interest during emergencies, in 'open-world' and "closed-world" environments. An open-world is where different people will be moving through a city type environment. A typical closed-world environment is an airport departure lounge where the same people will be moving around.

Old Low Quality CCTV Systems

When automatically identifying people and searching for persons-of-interest during live emergencies and investigations, time is crucial and low quality images of people/suspects from images captured using low quality CCTV cameras may be the only available video data to use. It would benefit the customer optimally to detect and follow persons-of-interest using such poor quality images from such networks of CCTV cameras.

Typical environments for **face recognition systems** are partially both open-world and closed-world and on many occasions where such legacy CCTV systems are used where the quality of CCTV camera is poor.





Typical Technical Challenges

1. Typical PERSONAL-ID images are very different to the actual live person e.g. several years older and loss or gain in weight.
2. PERSONAL-ID images are often edited in photography studios for vanity reasons and this makes technical recognition problematic. This is because;
 - a. The subject in fact looks very different to real life.
 - b. This risks a serious security breach by allowing person "A" to penetrate a security system as person "B" (espionage, terrorism, etc.).

A typical example of an aged and edited image:



PERSONAL-ID



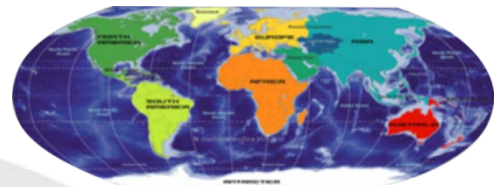
Actual image of face

A PERSONAL-ID image can be used when looking for persons-of-interest during emergencies or rapid investigations, using ageing techniques crosschecked with our other person following techniques..

If an image is edited it can be identified as a potential security risk and will not be used to verify a person for security clearance.

3. PERSONAL-ID images are usually manually scanned with poor quality scanners, and when saved, poor compression causes too many corruptions to the image.





Viseum's Proven Face recognition System Techniques

Viseum's unique experiences and innovations have proven that passing a test better than any other **face recognition software** will not deliver operational success for the customer, without the use of Viseum's other technology innovations. For example, depending on the poor quality input images of the persons-of-interest, if a 60% success rate in a closed-world environment gives the customer confidence to award the project, it will deliver too many missed subjects and too many false-positives, when used in a partially open-world environment.

Viseum Software and Hardware Technology Services will always use the best face input images available. Sometimes these input facial images will be poor quality; however, the chances of finding suspects under live open-world technical challenges, will always be increased with many other techniques:

1. The last known location of the person-of-interest - Geospatial Software Technology Services to predict the likelihood of the person-of-interest location with a gallery of likely suspects.
2. Person recognition F3 (Find, Fix and Follow) Software Technology Services will be used to automatically cross-reference, where possible other available face recognition and geospatial data.
3. Automatic Number Plate Recognition Software Technology Services. There are many techniques to associate people with vehicles, as a method to automatically cross-reference and find them.
4. There are many techniques available to improve the quality of face input images to rapidly search for person-of-interest during emergencies e.g. ageing techniques with social media.
5. Viseum will train the customer in better quality scanning of PERSONAL-ID image and processing techniques.





Face Recognition CCTV Security Success:

To proceed with security success Viseum will need to know the customer's exact technical requirement i.e. exactly what security result they wish to deliver. Once we learn of this in detail, we will also ask more questions to fully understand all of their operational challenges.

From this, Viseum will take all this information into consideration, and we will design and innovate a robust technology solution that will solve the customer's problems. The customer will then be trained to benefit from this new customised solution.

Face Recognition System Pilot Installation

As part of the customer's project delivery, we may recommend to run a full pilot as this may become essential for further customisation of the final solution. Please see these 2 x brochures describing some of these techniques:

- <http://www.viseum.co.uk/downloads/global-f3-find-fix-and-follow.pdf>
- <http://www.viseum.co.uk/downloads/viseum-ivos-facerec-intelligent-cctv.pdf>

