

## ISO IEC 19794-5

The International Standard ISO/IEC 19794-5 provides a digital face image format for recognition applications, which enables the exchange of face image data. Typical applications are:

1. human examination of facial images with sufficient resolution to allow a human examiner to ascertain small features such as moles and scars that might be used for verifying the identity;
2. human verification of identity through a comparison of facial images;
3. computer-automated face identification (one-to-many search);
4. computer-automated face verification (one-to-one match).

In order to enable many applications on a wide variety of devices (including devices that have limited resources for data storage), and to improve face recognition accuracy, not only does the ISO/IEC 19794-5 specify a data format, but it also provides scene constraints (pose, expression etc), photographic properties (lighting, positioning, camera focus etc), as well as digital image attributes (image resolution, image size etc).

## Morpheus ICAO

**Morpheus ICAO** evaluates the facial image according to the **ISO/IEC 19794-5**, which defines the requirements for image geometry and scenery of facial images, and returns Token Face Images and Full-Frontal Face Images that are compliant with it.

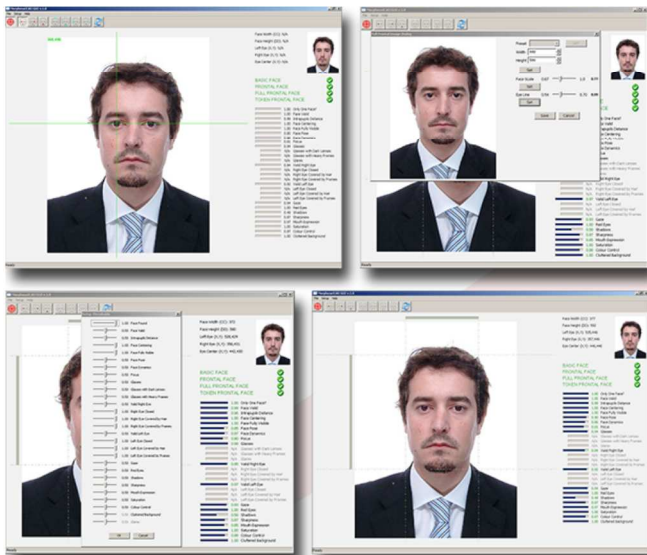
Real-time feedback capabilities make live capturing and automated enrollment faster and more efficient.

**Morpheus ICAO** accurately finds face and facial features (eyes, mouth, eyebrows etc.) in images with 8-bit grayscale or 24-bit RGB and automatically extract the following information:

- Number of Faces
- Origin at Upper Left
- Width of Head
- Length of Head
- Position of Eyes
- Centered Image
- Resolution
- Head Pose

**Morpheus ICAO**, according to the ISO/IEC 19794-5 standard, tests the facial area for automatically check the following quality requirements:

- Eye Glasses
- Red Eye
- Eye Patches
- Shadows in Eye-Sockets
- Mouth Expression
- Hot Spots
- Concealment by hat
- Uniformity of background
- Gray Scale Density
- Color Saturation
- Unnatural Color
- Shadows Over the Face
- No Over or Under Exposure
- Focus and Depth of Field



## Technical Data

**Valid input:** IEEE1394 cameras, USB cameras, scanners, Canon Powershot, image files. Compatible with Microsoft Direct Show capturing systems.

**Output:** Token Frontal Face Images and Full Frontal Face Images compliant to the ISO/IEC 19794-5 standard.

Supports reading and writing the **CBEFF Patron Formats A-C**, with ISO/IEC 19785-1 and ANSI INCITS 398-2005 interchange files.

**Morpheus ICAO SDK:** C, C++, C#, Visual Basic API for Microsoft Visual Studio 6 or above (Microsoft Visual Studio 2005 recommended), Sample Applications, Developer Documentation.

Optional **Morpheus ITL (Image Tools Library)** performs common image manipulation tasks, such as: • Resizing • Cropping • Rotating • Skew transforms • Color - Gray Scale - Black and White conversion • Compression • Import and Export of images for the supported formats: jpeg, jpeg2000, bmp, tif, tiff, png, pdm, pgm, pbm, sr, ras, pdf (further formats available upon request) • Custom tasks (e.g. structural non uniformity background correction) available upon request.

**Minimal system configuration requirements:** Intel Pentium IV, 2.0 GHz or comparable, 512 MB RAM, 200 MB of available hard disk space, Windows XP, Vista, 2003 (porting on Linux upon request)