



**SaveGarde**

# Airport and Homeland Security with IrisGuard:



*Largest Iris Application in the World ...*

*Security in a humane atmosphere*

## The World's Largest Iris Homeland Security Deployment ...

**More than 30 Million people searched ...**

**More than 500,000 illegal entries prevented ...**

**More than 40 trillion comparisons made ...**

### Why Iris-Recognition?

The aggravated situation of security in the post-9/11 era, in particular with respect to airports, calls for new solutions to assure good passenger flows with the highest levels of security.

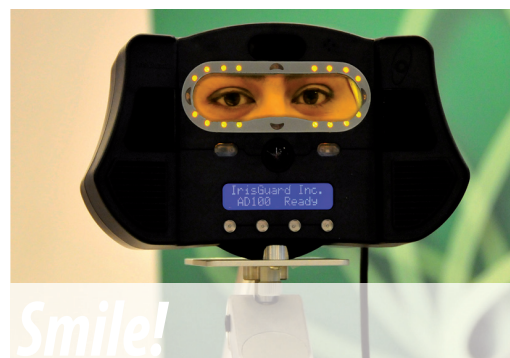
Our award-winning solutions are designed in support of a humane environment, where technology creates unprecedented levels of security while being non-intrusive to the passengers. IrisGuard is "... *the first devices tested under IBG's cross-comparative methodology to achieve perfect transactional matching error rates (0.00% ...)*" as testified by the International Biometric Group.

The methodology is not DNA based, emits no radiation, is non-invasive, contact-free (no communicable diseases) and 10-times more accurate than fingerprints. With 580,000 comparisons per second, analysis is extremely fast. No moving parts or contact handling, as well as high quality materials, leads to low maintenance costs.

### How does it work?

The passenger stands for a moment in front of the Iris-Camera aided by automatic voice control. The cameras have an incorporated eye-finding mechanism, optimize light and focus (we learned from 24 million trial runs), detects glasses or contact lenses - and can handle them, and verifies the liveliness of the eye.

Enrollment and Passenger Identification can be accomplished from the same desk, so separate enrollment stations are no longer required. Iris-Recognition can be used as verification of passport-identification or as a replacement solution. In that case, passengers once enrolled are only identified by Iris-recognition. The slimmed down process of border control is thus made fraud-proof and passenger flow faster.



*Smile!*

*Iris Recognition is non-invasive,  
contact-free and emits no radiation*

## Technical Data on the Camera System:

### Very Fast:

- 580,000 Comparisons/Second

### Perfect Focus

- Auto focus
- Fine Focus
- Focus QC

### Pupil Dilation

- Pupil/Iris ratio detection
- Flash tickler

### Eye Openness

- Openness QC

### Specular reflections

- Glass neutralization

### Ambient conditions

- Auto saturation
- Auto shutter speed
- Tolerant of lighting

### Motion blur

- Auto shutter speed

### Device Resolution

- Custom lens design
- 22 Lines per mm
- 230-280 Pixels across iris
- No up-sampling

### Proper illuminations

- Learned from 24 million users

### Eye finding

- Wide-angle
- Eye tracking/centering
- Interpupillary distance

### Built-in Counter-measures

- Contact Len detection
- Liveness detection
- Timeout restrictions
- Head-tilt detection

### Other Features

- Real time .wav downloads
- Multi-lingual
- Programmable buttons
- LCD display

## The security Model:

### Imager USB protection

- 24 Byte OTP
- Two 3DES Keys
- SHA2 signature

### Client-server-client protection

- Expiring OTP (5 seconds)
- SHA2 signature
- 3DES key (site specific)

### Attack detection

- Client lockdown after 3 failed:
- Recognitions
- Acquisitions
- Inquiries
- Tamper-detection of:
- User Data
- Iris templates
- System logs

### Template protection

- 3DES key (site specific)
- SHA2 signature
- Template never returned to caller.

### Key generation

- Client generated
- Three keys (storage, transmission and images)
- 3DES-based
- Templates permuted

### Client Authentication

- Username/password
- Username/password & Iris logon
- Username/MacID
- Username/MacID & Iris logon

### Client Authorization

- Separate business and IT management
- Enroll, modify, delete, Recog and activate privileges.

### Network separation

- Web servers and Database and Application servers can be on different segments

## Data-Security Standards used:

### Triple DES Encryption that complies with:

- FIPS PUB 46-3, Data Encryption Standard (DES), [FIPS46].
- FIPS PUB 74, Guidelines for Implementing and Using the NBS Data Encryption Standard, [FIPS74].
- FIPS PUB 81, DES Modes of Operation, [FIPS81].
- NIST Special Publication 800-20 Modes of Operation Validation System for the Triple Data Encryption Algorithm [TMOVS].

### SHA-256 Digital Signature algorithms that complies with:

- FIPS PUB 180-2 Secure Hash Standard, [FIPS180].

### The OTP random number generator that complies with:

- ANSI X9.31 Appendix A [AX931] (which replaces X9.17 Appendix C).
- FIPS PUB 140-2, Security Requirements For Cryptographic Modules [FIPS140] (as updated on 3 December 2002).
- Implementation Guidance for FIPS PUB 140-1 and the Cryptographic Module Validation Program [FIPS140IG].

