



Intelligent Kiosk Identification

Face Recognition On The Move

ABC Gate Technology

Biometric identification by face or iris characteristics

Use of biometric identification to simplify airport processes

The dramatic increase of passenger traffic in airports causes many challenges in term of security, of operations and user satisfaction at all control points like check in, terminal entrance, security check, border control and boarding.

It is not rare to witness overcrowded waiting lines in front of understaffed control points, while illegal entrant numbers continues to surge across the globe, using sophisticated fake documents. This calls for increased security features in the travel document but also for more efficient and reliable way of checking these features.

The gradual introduction of the electronic passport (e-Passport) is a crucial first step and will enable not only border control security to be enhanced and operations to be automated. Together with seamless working biometric face recognition camera technology it makes a paperless airport coming to be true. Instead of showing the boarding pass and / or ID documents to authorities or scanning documents at a self service terminal, travelers could be identified on the move by their face biometrics in a very comfortable and user friendly way.

How can the face being used as a proved and save token to cross the different check points?

The different processes

Check-In Kiosk:

1. Reading e-passport data and biometrics data from the chip (face / fingerprint).
2. Biometric passenger verification with e-passport data at the kiosk. Capturing of actual biometrics, generating and storing of a robust template (face token) in a local temporary database. Liveness check to prevent against spoofing.
3. Check of watch list in SIS.
4. Passenger completes check-in and eventually proceeds to manual or automated bag-drop counter.

Baggage drop off (manual or automated):

1. Passenger is identified by biometric identification (live face vs. template in the temporary database). No showing of paper boarding pass necessary. At the automated baggage drop off it is 100% secured, that only the owner of the boarding pass can drop off the baggage.

Boarding pass check / security check:

1. Passenger passes the boarding pass check with biometric identification. No showing of paper boarding pass necessary.

2. Passenger goes through security check (boarding pass check is integrated in security check point as access control).

Border control:

1. Passenger crosses the border control through an ABC Gate (automated border control) with biometric identification. No showing of passport necessary.

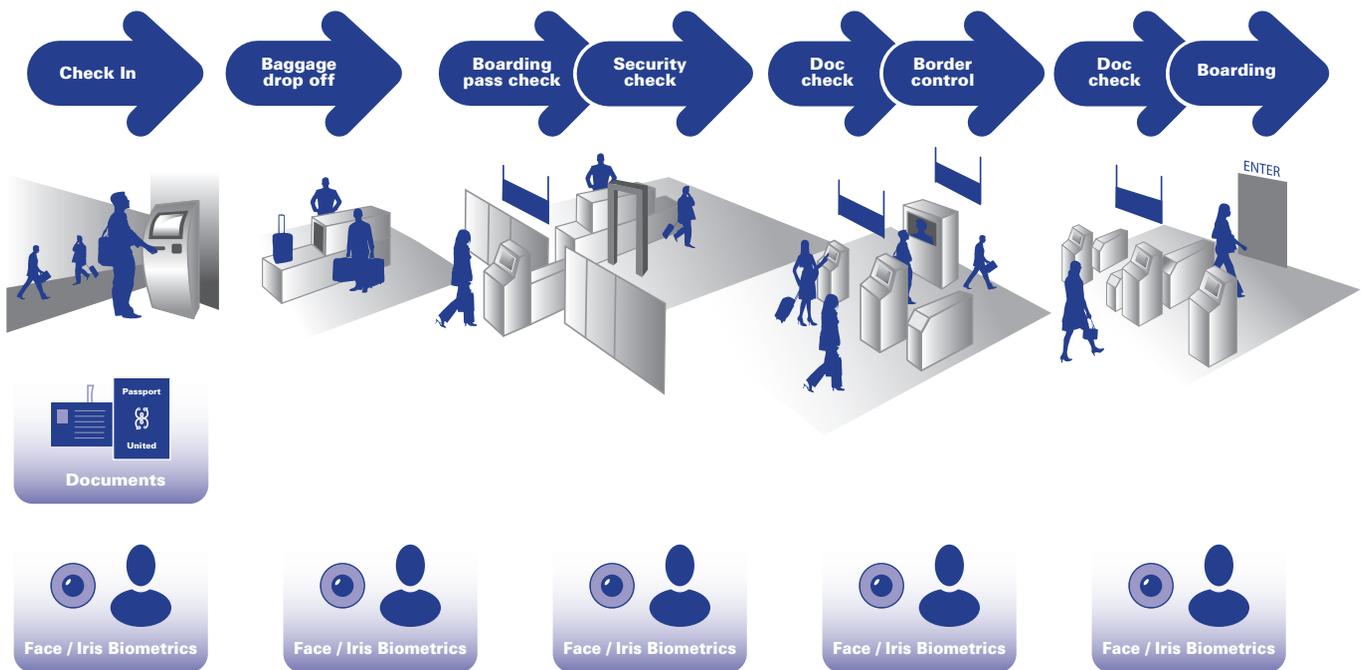
Boarding:

1. Passenger embarks the aircraft with biometric identification. No showing of passport or boarding pass necessary.
2. Data in the temporary database are deleted automatically upon actual time of departure or after 24 hours.
3. Exceptions can be if different countries which have a data exchange regulation following the local data privacy law. In these cases the passenger data is transferred to the arrival airport and can be used for the immigration process. That means that even at the arrival airport ABC Gates for automated border control can be used without showing the passport.

The "Paperless Airport" is not a dream anymore!



MODI Paperless Airport



- ➔ Paperless processes
- ➔ Acceleration of process, thus reduction of queuing space

This kind of process by using the face as a token to cross the different check points instead of using the boarding pass and passport causes a lot of benefits.

The passenger has much more convenience through such paperless airport including a real acceleration of the travel process. By time savings the traveler will have more time to relax and has always the feeling for a higher security.

The Airline has a higher grade of automation which enables a more efficient use of resources and reduction of costs. The earlier data exchange with public authorities, the earlier clearance and the certainty about boarded passengers through biometrics causes more security and includes improved services.

The public authorities have the chance to risk assessment prior to the departure (deny of entry at departing airport), thus the level of security (border, customs) can be

increased. The early knowledge of the passenger data can simplify the controls for low-risk passengers and concentration of man power on problematic passengers. All this comes together with a reduction of costs.

The Airport benefits from more attractiveness through the innovative processes including cost reduction through automation. This is combined by the reduction of queuing space through a higher process speed.

The prerequisite for a paperless airport is the possibility to read e-passports at check-in kiosks combined with biometric check and generation of an actual stable face template of the passport owner. These kiosks need interfaces to the Departure Control Systems of the airlines and to the public authorities. The automatic access control is done by biometric face recognition cameras at all check points.

MODI has realized the technical base for a seamless airport crossing without Boarding Pass and Passport.

The intuitive user guidance of the MODI Check-In and ID kiosk has an outstanding usability combined with a very high security level. Counterfeit and liveness detection is integrated together with face recognition and an optional fingerprint reader to check the passenger ID against the face / fingerprints on the passport chip.

Additional cameras generate a robust face and iris template under visible- and NIR illumination. This makes it possible to have a save and fast 1:n ID check at all following Check points independent of different internal or external light situations.

For all ID-Points like Terminal Entrance, Security Check, Border Control or Boarding, the MODI FaceBridge ID system can realize a crossing speed of > 700 passengers / hour / lane. Instead of moving a camera to make a height adjustment of the passenger, the images of the FaceBridge cameras are taken through a mirror, moving quickly in a magnetic field.

Biometric face and iris ID Products

Products for

- Check-in
- Terminal Entrance
- Automated Border control
- Boarding

All MODI products which are based on biometric face identification have an outstanding performance by MODI special technologies.

Features

- Intuitive passport handling assistance monitor
- Persons height adjustment within 20 milliseconds
- Less influence of external light by additional near infrared illumination
- Face recognition on the move
- Optional liveness detection

MODI specials for biometric face and iris identification products

Based on more than 10 years of experience in the area of camera based identification, MODI has developed outstanding technologies and products for the different automated biometric ID solutions.

Adomo® cameras for face / iris capturing in a height of 1,2 – 2,2 m at different positions

Adomo® technology is based on a fast moving mirror to capture high resolution face and iris images within milliseconds.

This MODI patented technology (integrated in all high end MODI cameras) is maintenance free and works 24/7 with unbelievable speed thanks magnetic field technology.

Identification Kiosks with optional NIR (near infrared light) translation technology (NTT)

MODI Kiosk's include biometric face matching of the user with his passport image, all use case depending procedures, optional re enrollment even with NIR illumination and optional counterfeit detection for documents and liveness detection. MODI Kiosks are used for Check In, Baggage drop off, Pre Border Check, general Enrollment, and have an outstanding usability.

MODIbridge® and MODItower® high end biometric face and iris recognition devices

These biometric ID systems are more than only a camera. MODI ID systems include: Camera technology, moving mirror for height adjustment, illumination, TFT display for user feedback, Eye catcher and optional liveness detection.

Anti spoofing technology including mask detection

MODI Anti spoofing technology includes detection of face images printed on paper, textiles (tee-shirt or similar), face image or face video shown on an iPad, Tablet PC, or similar including detection of all kind of masks.

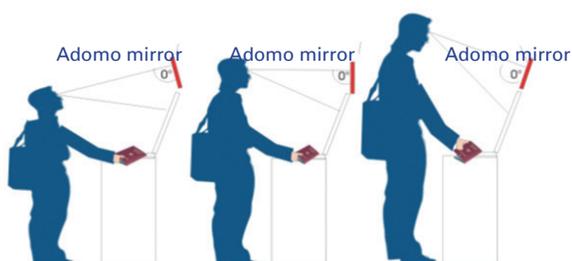
MODI biometric identification kiosk with optional NIR translation technology. (NTT)

Flexible Kiosk design for different use cases and outstanding usability.

- Check In Kiosk
- Pre Border Check
- Document and ID Check
- Enrollment Kiosk

Optional Devices:

- Passport reader
- Biometric Face ID check
- Biometric Iris ID check
- Fingerprint reader
- Document reader
- Receipt printer
- Enrollment camera
- Visible and NIR illumination



1,20 m
Score 0,99

1,75 m
Score 0,99

2,20 m
Score 0,99



MODIbridge® biometric face / iris ID system

MODIbridge® Features

- Face / Iris recognition for all kind of ID Checkpoints
- Biometric identification „On The Move“
- Exceptional throughput
- Camera position in walking direction above the head.
- Unmatched meantime between failure
- Optional „Counterfeit detection“
- Optional NIR illumination to fit any lightning ambiance.



User-friendly

The best position for the traveler to be verified is one meter behind the exit door of a gate, installed in a height of 2,2 m. This position is in the walking direction of the gate crosser: a traveler can never be faced with the issue of his distance to the camera (too near or too far).

The MODIbridge® is an all in one solution which has the design of a flat TV screen. The traveler enjoys intuitive usage by looking to common international traffic sign symbols (stop and go) instead of text information as a base proposal.



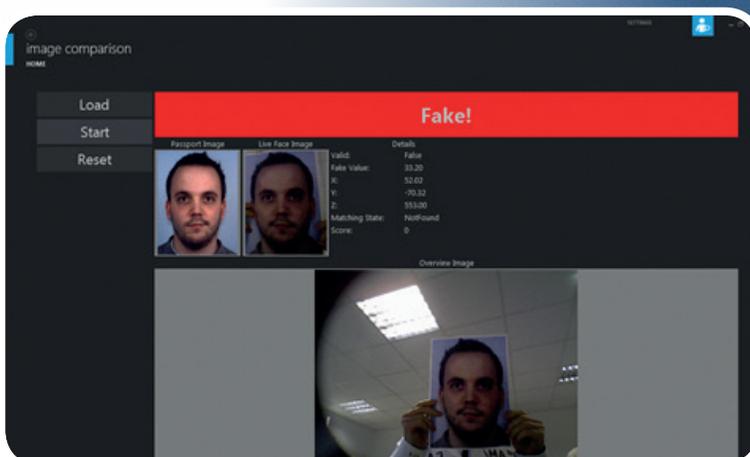
The MODItower®

The MODItower® is MODI's solution for a fast, accurate, flexible, highly secured and user friendly face and iris recognition biometric verification of the traveler in all kinds of automated border control gate scenarios where the face and iris recognition has to be placed at the left or right side of the gate.

User-friendly

The MODItower® is installed at the left or right side of the ABC Gate one meter behind the exit door. This position is in the walking direction of the gate crosser: a traveler can never be faced with the issue of his distance to the camera (too near or too far).

Up to a distance of 1.0 - 2.0m, the optional iris recognition camera is easy to use without special interaction of the traveler.



Optional Counterfeit detection

The system includes:

- Detection of printed face images (paper and textiles)
- Detection of face images on I Pad, I phone, Tablet PC's, Smart phones, etc.
- Detection of face videos on I Pad, I phone, Tablet PC's, Smart phones, etc.
- Detection of all kind of masks



MODi

Vision for Identification

Your partner for biometric identification

↘ **Washington (USA)**

2001 L Street NW, suite 750
Washington DC 20036. USA

Phone +1 202-468-6842
info@modivision.net

↘ **Gummersbach (Germany)**

Vollmerhauser Str. 34
D-51645 Gummersbach, Germany

Phone +49 2261 91552-0
info@modivision.net

www.modivision.net