FASTPASS NEWSLETTER #7

Spring 2015

FastPass needs you! Do you travel by air? You can help us with our research by filling out this <u>survey</u>!

FastPass takes into consideration all kind of passengers. Few e-gates are currently accessible to people with disabilities or reduced mobility. If you belong to this category of users and if your are willing to share your opinion on this, please fill out this <u>questionnaire</u>.

Spoofing prevention techniques in ABC Gates

by Dieter Klawunder, CEO of MODI (Modular Digitis GmbH, Germany),

member of the FastPass Consorium.

The majority of passports in Europe store the biometrical face image of the passport owner on a chip. In an ABC Gate this image has to be compared with the live face image of the traveler when they are crossing the Gate or standing in front of a special ID station or kiosk. The face image is captured by a camera and matched by biometric software. For the camera itself it makes no difference whether it captures a snapshot of a live face image or a picture on a piece of paper. That makes it very easy to spoof

the biometrical face recognition in ABC Gates. Such spoofing can be achieved by the presentation of a printed face on paper, a tee shirt, or by presenting a face image or video from an iPad, iPhone, tablet PC, notebook or by use of a face mask.

One objective of FastPass was and is a solution for spoofing prevention which is:

-Safe against false acceptance
-Robust against false rejection
-Fast

MODI has developed an anti-spoofing solution which is based on different measurements in addition to the live face capturing. The solution contains an additional near infra-red (NIR) infrared camera and additional NIR multi-wavelength area and multi-spot illumination. The system works mainly by measuring the reflected NIR light which is different between skin and other materials plus analysis of the 3D structure.

The developed system works under different light conditions with a detection rate of 100% for iPad, iPhone, tablet PC, notebook, or similar. For spoofing by an Image on paper or textile the detection the rate is 97%. One big advantage is the system's detection speed which makes it possible to use the anti-spoofing function also when the traveller is moving without he/she having to stop at a fixed point.

The exception is mask detection, where a person needs to stand still for a minimum of 5 seconds. For this we use the fact that the FastPass concept includes a kiosk pre identification where the passport of the traveller is read, their face already matched against the passport image and an additional enrollment is done under NIR light.

During this process, the traveller stands still in any case for much more than 5 seconds which makes it

possible to do the mask detection. This MODI anti-spoofing device will be integrated into all FastPass Face cameras independent of the use case - land, sea or air borders.
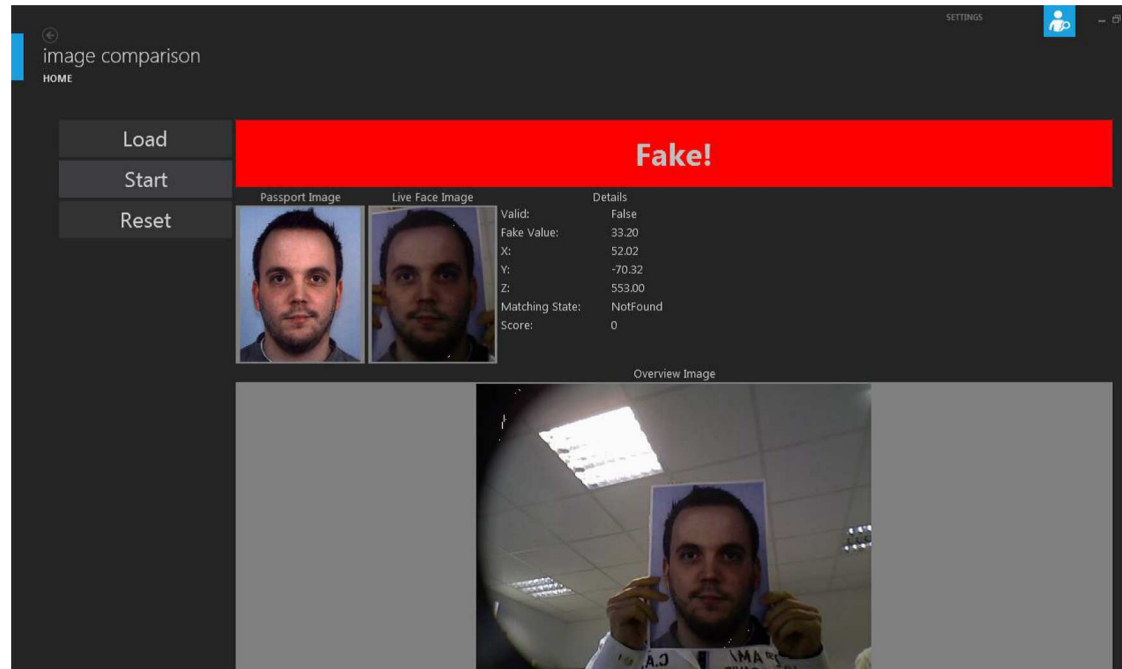
Detection of a spoof with a printed face image on paper - © FastPass Consortium

ISBC 2015

the first international workshop on Identification and Surveillance for Border Control

Under the umbrella of the AVSS 2015 conference, the University of Reading (UK) and AIT- Austrian Institute of Technology (Austria) are jointly organising the first international workshop on Identification and Surveillance for Border Control (ISBC 2015). This event will take place in Karlsruhe (Germany) on 25th August 2015.

ISBC 2015 focuses on current issues linked to Automated Border Control (ABC). These processes rely on biometrics for identity recognition and video surveillance. Nowadays, the number of travellers is constantly increasing, as well as the security and the privacy-compliance demands. This motivates the stakeholders involved in the border crossing process to find newer and more efficient solutions.

This workshop proposes to bring together a wide range of researchers, industry and practitioners in biometric and/or monitoring/surveillance technologies in ABC in order to discuss the possible developments of current applied and emerging innovative biometrics as well as innovative monitoring and surveillance for ABC. The issues linked to harmonization, standardization, legality and ethics will be also dealt with.

A call for papers has been opened until the 15th of June 2015 and concerns several areas (people tracking, counter spoofing in biometrics for ABC, data fusion etc.).

ISBC 2015 is sponsored by the European Association of Biometrics, eu-LISA and the Biometrics Institute. More information is available here: https:///isbc2015.net

# Graphical user interface for border guards - intuitive access to passenger information helps

in decision making

by Mari Matinlassi, consultant at Mirasys (Finland), member of the FastPass Consortium.

The graphical user interface developed for FastPass displayss the progress and results of the automated border checking process to Border guards who use this information in decision making. The user interface provides clear indicators of potential risks which have been analysed by the gate system. Furthermore, the system suggests an action and communicates it to the border guard. All the details of risks and proposed decision are available on demand helping border guards in final decision making. The picture below illustrates the most important *passenger information* that is visible and accessible through the use interface as well as the most important *decision making functionalities.*

The graphical user interface has been designed with three driving usability principles: intelligibility, simplicity and anticipation. It is easy and fast to understand indicators that show when the system reaches a decision (green check box for "ok" and red cross for "not ok"). The indicators are pre-shown as placeholders before the system has made the decision so that decision can be anticipated. Further, each indicator is located close to the information on which the (system) has based its decision e.g. "face capture progress ok" indicator is located on the face capture image. For each check, only a simple indicator is shown and more information is available on demand. Unnecessary redundancy has also been avoided e.g. each indicator is shown only once.
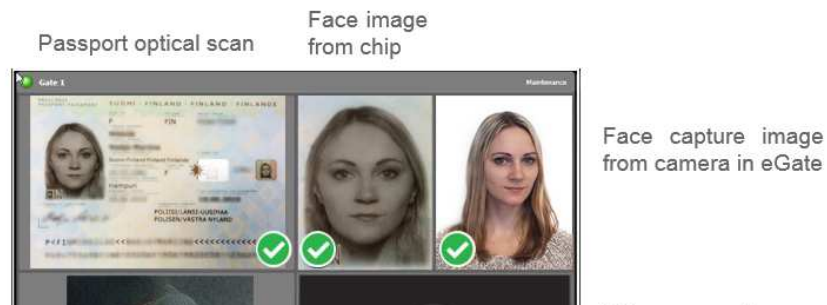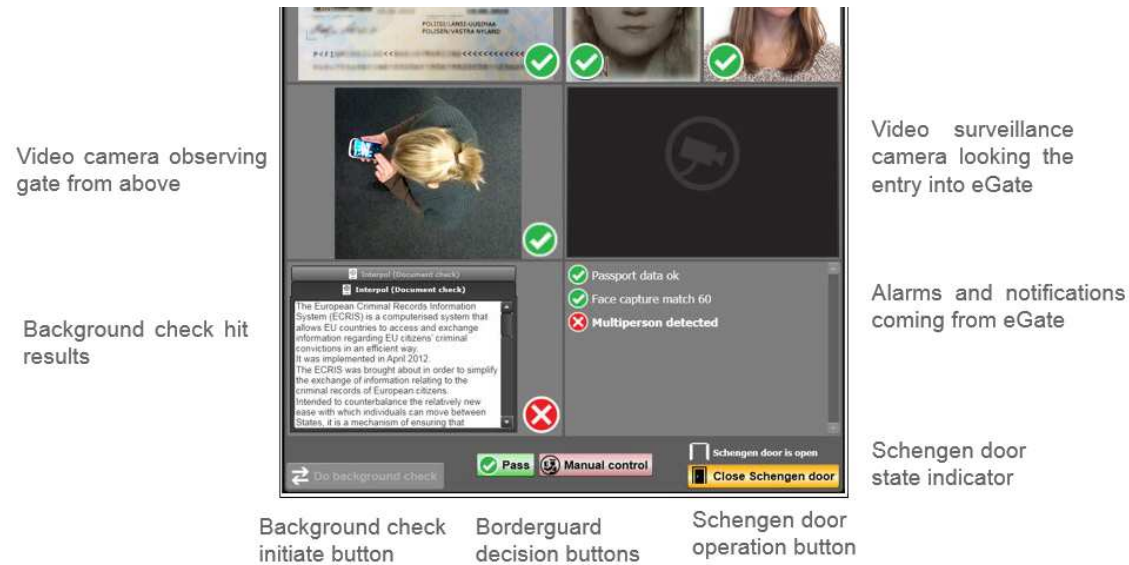
Most important elements of the border guard GUI - © FastPass Consortium

FastPass and the EU's Smart Borders Initiative

There is a revolution going on within border control agencies around the world. This is not just a reaction to an increased threat from terrorism and illegal entry, but it is also a determined effort to make long queues at ports and airports a thing of the past, as well as reducing the amount of taxpayers' money spent on the control itself.

The European Union is amongst the leaders in this move towards more effective, efficient and economical border management. You will have seen rows of e-Gates at increasing numbers of European ports and airports and these have brought the idea of *self-service* to the border crossing experience.

The EU is proposing to create an electronic entry and exit recording system (EES) for non-EU citizens and a registered traveller programme (RTP) for all passengers whose entry and exit do not require any formal examination by border guards. Trials of potential technical solutions for the *Smart Borders* programme are now going ahead in several EU countries.

FastPass was set up to provide a standard model for automated border control (ABC) which is a major component of any self-service border system: it allows passenger data collection from travel documents, automatic watch list searches and a biometric verification of the link between the passenger her/himself and the evidence of their identity and eligibility to cross unimpeded. According to the FastPass model, the components can be standardised and harmonised and used anywhere where ABC is required, whether it be on air, land or sea borders.

Where FastPass can assist the *Smart Borders* drive towards more effective, efficient and economical border systems is through its examination of the *human factors* involved, in its consultation with groups concerned with human rights, the law and the ethical dimension in using biometrics, passenger personal data and automated decision making.

A Smart Border demonstration went live on March 15 at Lisbon International Airport and will run until the beginning of June in collaboration with the Portuguese border agency SEF. This first test case consists of testing exit ABC eGates operation for non-EU citizens.

FastPass is running similar trials at Vienna Airport, at the Romanian/Serbian land border and on the Greek island of Mykonos for sea passenger traffic. While the trials will involve innovative use of data and biometrics, the main aim is to ensure the *usability and accessibility* of such systems for EES and RTP, as well as the secure and lawful use of personal data.

The results from the trials will feed into the Smart Borders initiative to ensure that travellers into and out of

Europe's *Schengen Area* not only get the most convenient border crossing experience, but also one of the most secure and cost-effective.

Meet the Consortium!

The FastPass Consortium will be present at the SDW 2015, taking place on June 9-11 at the Conference Center in Westiminster, London (UK). The Coordinator Markus Clabian (AIT) will hold a presentation entitled "Biometric solutions in ABC Systems".

The FastPass Consortium will this year again take part in the Research Projects Conference (EAB-RPC) organised under the umbrella of the European Association for Biometrics.
This event will take place in Darmstadt, Germany, on 7th and 8th September 2015. Click on the icon for getting the detailed programme of the event!

Our archived newsletters are available here !