Mobile Pass Device

OVERVIEW

In the MobilePass Project, a versatile, secure and mobile check device for border guards was developed. It is a prototype which shows functionalities like contactless fingerprint scanning, MRZ reading with a camera and facial verification. It has a specialized hardware and ergonomics design optimally suited for Border guards' use. It can be operated attached to the wrist, leaving both hands free for passport handling and also with one hand for biometric operations. The hardware includes a high-resolution camera, a quad core CPU and an accelerator FPGA. For fingerprint scanning a special LED light system improves image quality. A large and sunlight readable display with touch support and a colored multi wheel makes it very comfortable for one handed operations. The operating system is a special adapted Linux version with a system boot time of less than 15 seconds. High connectivity features like BT LE, Wi-Fi and 4G help for integration into other IT systems. It is based on a heterogeneous platform system.

FUNCTIONALITY

Border check workflow status display

For a typical border control application several checks have to be made. The application is optimized to the typical check flow at the border. As shown on an example below the actual status of the travelers check process is marked on the right side with red (not successful) and green (successful) symbols. There are symbols for the authenticity of passport and the Visa, for the facial and fingerprint verification and for the database check results (Schengen information system, Visa Information system, Interpol database and national databases).

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Contactless fingerprint recognition and verification

The device demonstrates a new possibility to scan finger-prints very fast in a contactless way. (In the future 4 fingers simultaneously). In the typical border control use-case, the fingerprint information from the passport is verified against the passport holders fingerprints and - according to the national rules - access is granted or denied. The cap-turing process and the verification works in parallel, the human operator immediately observes the results of verifi-cation on the device´s screen. This new method allows the biometric verification of a traveler in a less intrusive way.
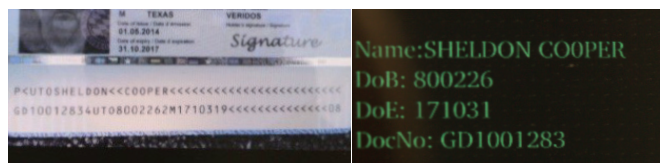

Facial recognition & verification

For facial verification (e.g. facial image read from electro-nic passports) the image is compared to the live image from the build in camera. The result of the verification process is immediately shown on the display. For easier use an in-dicator turns green if the match quality is high enough. The capturing and verification process work in parallel.

Machine Readable Zone (MRZ) scanner

The build in camera and software is also capable of scan-ning the MRZ from a machine readable travel document (MRTD) in a very fast and convenient way. It also verifies if checksums are correct. The software scans type 1, 2 and 3 MRZ documents.

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