

INTRODUCTION

MUEHLBAUER GROUP – MB TECURITY®

Founded in 1981 in the heart of Bavaria, the Muehlbauer Group has ever since grown to a leading global player in the fields of Parts & Systems, Semiconductor Related Products, Document Solutions & Equipment for Security Systems, and innovative Technologies for eMobility and Flexible Solar Solutions.

Muehlbauer has developed its innovative TECURITY® division over the past 4 decades with enormous know-how from its other business areas. This unit is established as a competent partner for the implementation of Identity Management systems and Entry and Exit systems including Automatic Border Control (ABC) for identifying and verifying both documents and individuals. Governments and institutions profit from the immense experience Muehlbauer has gained during the realization of over 300 ID projects worldwide.

The technology expert supplies customers with machines and software, also takes full responsibility for the implementation of the project – from the conception and construction of the infrastructure on site, through data collection, Identity Management to the issuing of highly secure officially ID documents to the population. In addition to technology, design also plays an important role: the Muehlbauer Document Solution Team has already developed countless impressive designs for passports and ID cards that reflect the landscape and culture of the respective country and at the same time improve the security of the documents.

At Muehlbauer, everything comes from a single source. Key hardware and software components required for a project are developed and manufactured in-house at the German Headquarters in Bavaria or at one of its state-of-the art competence centers around the globe. Muehlbauer bundled up its competencies to serve as a reliable partner for unique identity solutions.

MUEHLBAUER GERMANY

Muehlbauer Group Headquarters
Josef-Muehlbauer-Platz 1, 93426 Roding, Germany
Phone: +49 9461 952 0, Fax: +49 9461 952 1101
info@muehlbauer.de, www.muehlbauer.de

MUEHLBAUER USA

Muehlbauer Inc.
226 Pickett's Line
Newport News, VA 23603-1366, USA
Phone: +1 757 947 2820, Fax: +1 757 947 2930
info@muehlbauer.com, www.muehlbauer.com

MUEHLBAUER MALAYSIA

MB Automation (Malaysia) Sdn. Bhd.
No. 3 Jalan TU 62, Taman Tasik Utama,
75450 Melaka, Malaysia
Phone: +60 6 275 7100, Fax: +60 6 275 7101
info@muehlbauer.com.my, www.muehlbauer.com.my

MUEHLBAUER SERBIA

Muehlbauer Automation d.o.o.
Evropska 17, 22300 Stara Pazova, Serbia
Phone: +381 22 215 5100, Fax: +381 22 215 5130
serbia@muehlbauer.de, www.muehlbauer.com

MUEHLBAUER CHINA

Muehlbauer Technologies (Wuxi) Co., Ltd.
No. 23. Huayi Road, Wuxi New District
214135 Wuxi, Jiangsu, China
Phone: +86 510 8190 0100, Fax: +86 510 8190 0101
info@muehlbauer.cn, www.muehlbauer.cn

MUEHLBAUER SLOVAKIA

Muehlbauer Automation s.r.o.
Novozámocká 233, 94905 Nitra, Slovakia
Phone: +421 37 6946 000, Fax: +421 37 6946 501
info@muehlbauer.sk, www.muehlbauer.com



MB SEAMLESS TRAVEL CORRIDOR

SOLUTION CONCEPT MUEHLBAUER GROUP



MB Automation GmbH & Co. KG
Josef-Muehlbauer-Platz 1 | 93426 Roding | Germany
Tel.: +49 9461 952 0 | Fax: +49 9461 952 1101
Mail: info@muehlbauer.de | Web: www.muehlbauer.de

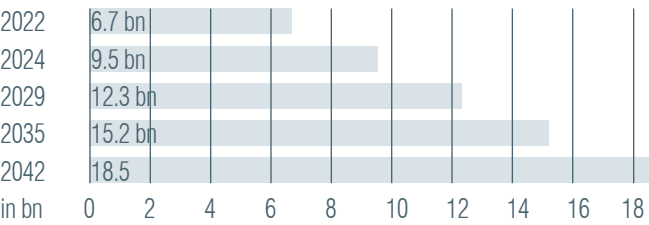


CURRENT CIRCUMSTANCES

GLOBAL CHALLENGES FOR BORDER MANAGEMENT

The constant globalization is leading to a worldwide increase in travel activities. Passenger volumes are rising approximately and is projected to grow at an average annual rate of 3% from 2024 to 2053. This growth is expected to result in approximately 18.5 billion passengers by 2042 and 23.2 billion by 2053, nearly 2.4 times the projected volume for 2024.

Development of Flight Passenger Volumes



(Sources: ACI World, World Airport Traffic Forecast Update, September 2024)

To meet the growing number of travelers, airports, seaports, and border control checkpoints require efficient solutions that enable both faster processing and secure border crossings.

ABC Systems (Automated Border Control systems) not only enhance the capacity of border control but also significantly increase security. By matching biometric data with travel documents, travelers' identities are precisely verified, reducing the risk of identity fraud and unauthorized entry. Automated security checks allow for continuous monitoring, while the use of self-service controls increase efficiency and reduces costs. Additionally, these systems help detect suspicious activities at an early stage and enable a swift response from authorities.



SOLUTION CONCEPT

MB SEAMLESS TRAVEL CORRIDOR – Faster processing through Smart Systems

Muehlbauer's Seamless Travel Corridor represents a groundbreaking approach to border crossing, allowing travelers to navigate security with minimal interaction and no need to show documents. Travelers simply walk through the corridor without stopping — and perhaps without even noticing — and are recognized and identified by the smart frame. This innovative system utilizes advanced machine learning, artificial intelligence technologies and image processing for efficient background operations, employing facial identification and person re-identification with tracking capabilities.

Designed with a small footprint, the Seamless Travel Corridor can be easily deployed across various locations, including airports, land borders, and seaports — all while prioritizing security and privacy by design. The system uses multiple high-resolution cameras, providing high-quality images with fast transmission speeds (less than 30 milliseconds possible). To ensure flexible deployment, it supports various standard protocols such as USB and RTSP, as well as a specially developed Muehlbauer high-speed protocol that communicates over a 10 Gbps network and can handle video streaming in 4k without any compression of the image. With low communication latency, the visualizer software enables near real-time image monitoring via tablet or computer through a web service.



Its ability to capture individuals in random group formations — regardless of active cooperation — greatly enhances its effectiveness. The system can detect persons at distances of up to 12 meters, track and match faces up to 8 meters away (with a standard of 7 meters), and is achieving throughput rates three times higher than traditional ABC solutions within the same physical space.

Pre-registration prior to crossing the corridor is possible using electronic Machine Readable Travel Documents (eMRTD), digital IDs (such as mobile driver's licenses, Digital Travel Credentials, or Digital Travel Authorizations). The Seamless Travel Corridor can be easily integrated into existing Border Management Systems (BMS), ensuring a smooth transition to more efficient border control practices.

Moreover, this system is cost-effective, utilizing compact hardware for processing. The corridor can be installed in blocks or segments, allowing for customization based on spatial requirements, and the models are self-trained using data that is completely free of licensing costs.

This innovative solution not only revolutionizes border management but also enhances the overall travel experience, ensuring both security and efficiency.

COMPLETE SOLUTION

MB ABC KIOSK AND MB SEAMLESS TRAVEL CORRIDOR

The Seamless Travel Corridor and the ABC Kiosk by Muehlbauer work together seamlessly to ensure efficient and smooth processing of travelers. Passengers can register at the ABC Kiosk, with their data automatically integrated into the Seamless Travel Corridor system. This close integration of both systems enables continuous, automated identification and verification, making the process faster and more secure.

Muehlbauer therefore offers a complete solution that covers the entire process — from registration to secure border crossing.

The ABC Kiosk is capable of reading electronic travel documents, verifying their validity, checking watch lists, and performing biometric facial recognition. It can also facilitate various customer-specific tasks such as completing declarations, verifying visas, and processing visa applications.

By default, the kiosk captures and analyzes the traveler's frontal facial image for presentation attack detection, helping to prevent forgeries. The live-captured image is compared exclusively with the facial image stored in Logical Data Structure Data Group Two, which complies with ICAO 9303, Version 1.8 standards. In addition, the verification of the digital signature and the correct hash values in the Security Object (SOD) ensures that the stored facial image of the document holder has not been tampered with.

The Seamless Travel Corridor can be easily integrated into existing Border Management Systems (BMS) and enables a smooth transition to more efficient methods of border control.

