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COMPANY



MÜHLBAUER GROUP AT A GLANCE

global player in the fields of Parts & Systems, Ad- and highest customer satisfaction. vanced Energy Solutions, Semiconductor Related Products, Document Solution Related Products and Our youngest and currently most dynamic division. Our business unit TECURITY® is established as a com-TECURITY® Solutions.

created a strong competence network around the globe. stacks for fuel cells since 2022. We continuously invest in the latest technologies and innovative processes to enhance our competences and to Our business unit AUTOMATION does not only develop provide you with optimized solutions.

Founded in 1981 in the heart of Bavaria, the Mühl- Our in-house precision part production - MPS - Mühl- Vision inspection technologies as well as semiconduc-

With more than 4,000 employees, technology centers in eMobility industry, we have been offering highly efficient individuals. Germany, Malaysia, Slovakia, the U.S. and Serbia, and production lines for the manufacture of pouch- and pris-35 sales and service locations worldwide, Mühlbauer matic cells for lithium-ion batteries, as well as MEA's & Our clients benefit from more than three decades of expe-

> and assemble individually customized production systems, but also provides matching software solutions for the production process of Document and Solution Related Products.

bauer Group has ever since grown to a leading bauer Parts & Systems – guarantees unlimited flexibility tor and RFID applications complete our comprehensive

ATECH – Advanced Energy Technologies – brings unique petent partner for the implementation of security sysmachinery requirements to series production. For the tems for identifying and verifying both documents and

> rience which we have gained in the realization of over 300 ID projects worldwide.





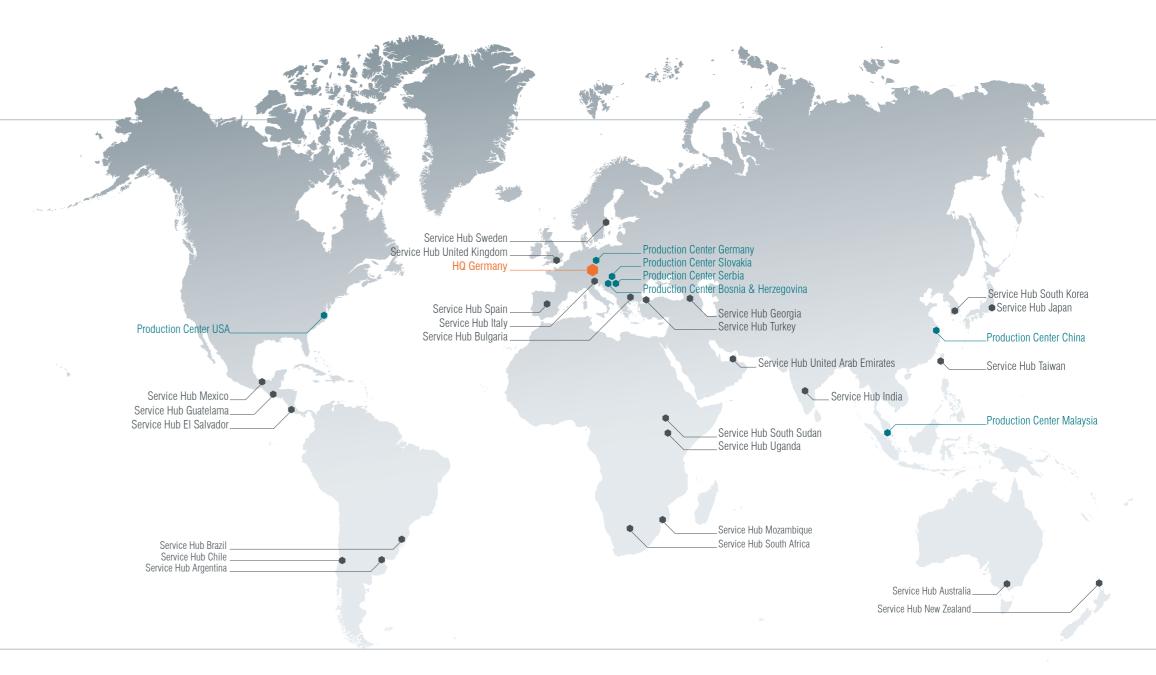














HISTORY

OUR COMPANY AND ALL ITS COMPETENCIES HAVE THEIR ORIGINS IN PARTS MANUFACTURING.

Today, our **in-house parts production** facility is our guarantor for rapid, high-quality and high-precision machine parts – independent of external changes and fluctuations. Mühlbauer further developed its machinery for particularly precise and fast handling of sensitive materials.

In the 1980s, we were able to jump into the **semiconductor market** and actually developed the world's fastest die bonder — at that time with a 10-member team. Step by step, Mühlbauer took over the technologies and experience of this market-leading die sorting machine for several other fields. After immersing ourselves in the world of **Document Solution Related Products** such as ID cards, passports and driver licenses, we also started to supply companies and governments with the suiting **software and service solutions** for secure authentication and verification of the ID documents. Since then, our portfolio has constantly evolved and adapted to the latest technologies. In addition to the innovation of products like **flexible solar cells**, the Mühlbauer Group has particularly specialized in the **eMobility** area in recent years and meanwhile offers turnkey solutions for fuel and battery cell production. Ideas have no limit at Mühlbauer. The future is our present!

FOUNDATION



Founding of the company by Josef Mühlbauer with only one machine for the production of precision parts

PRECISION PARTS



Large-scale production of precision parts for aviation and automotive industries

SEMICONDUCTOR



Development of production equipment for the semiconductor backend industry

DSRP



Document Solution Related Products. First turnkey production solution for the manufacturing of plastic cards & smart cards

TECURITY®



Technology meets Security.
Software and service solutions for secure ID documents & eGovernment

ATECH



Automotive industry, E-Mobility: Production lines and software for battery & fuel cell systems



PROCESS



PROCESS OVERVIEW

LET'S CHECK OUT WHAT HAPPENS WHEN MÜHLBAUER RECEIVES THE TASK TO INTEGRATE A NEW IDENTITY SYSTEM IN A COUNTRY.

As MB does not sell single products, but completeley customized solution, we start with the **implementation concept** — what is the customer's need and how do we get there? To be able to verify and authenticate people and their identity documents, we will firstly set up **enrollment stations** with modern MB equipment, where every person can reliably be identified. The collected **data** will be managed and stored by secure MB systems, which are also developed in-house and adapted to the wishes and special requirements of each country. After all the preparations starts the **production process** of the documents. Mühlbauer enables its customers to produce all the needed documents by themselves. The manufactured documents are then ready to be **personalized** with the captured data from the enrollment centers. Also for this purpose, Mühlbauer fully equips its customers and supports in any difficulties and challenges. The circle closes with the **verification of documents** at checkpoints, border crossings or airports. The necessary devices and systems are also supplied directly by Mühlbauer.

CONCEPTION



- Consulting
- Solution Architecture
- Design

ENROLLMENT



- Payment Registration
- Demographic & Biometric Data Capturing
- Administrative Application Approval

DATA MANAGEMENT



- Life-Cycle Management
- Biometric Identification Systems
- PKI System

PRODUCTION



Document Production

Material Management

- tems Production Management
- KI System

PERSONALIZATION



- Material Management
- Personalization Management
- Visual & Electronic Personalization

VERIFICATION



- Issuance Solution
- Border Management Solution
- eGovernment Solution



CONCEPTION

BETTER WELL THOUGHT OUT THAN TWICE DONE.

The conception of our identity projects comprises a de- Insight: In the conception phase, our in-house design team. The visual implementation turns every card into a unique tailed project plan with information and proposals about all defines the look and feel of the identity document together piece and offers at the same time the possibility to insert sethe needed machines and devices, the locations they are with our client. On the one hand, this design is about visual curity elements, which convert the polycarbonate card into planned to be set up, about the suiting software and its infraideas and the graphical realization; on the other hand, we a highly secure document. We call this approach Security structure, about administration and logistics, and about the have to combine these aesthetic aspects with technical decooperation with local suppliers and the training of staff. Our tails. An ID card for example consists of 5 to 7 layers with costumer reveals the needs and wants - Mühlbauer con- different functions and made from different materials. For verts this into an encompassing solution concept.

our Bavarian Sample ID card, Mühlbauer depicted the music notes of the Bavarian anthem on the printing layer of the ID card, just visible when shifting the card back and forth. A Bavarian Lion illustration hides on the card's front - only visible (and verifiable) under UV light.





ENROLLMENT

EVERY HUMAN BEING IS UNIQUE. AN INDIVIDUAL'S BIOMETRIC COMBINATION IS DEFINED BY 260 OPTICAL CHARACTERISTICS OF THE IRIS, THE PATTERN AND MINUTIAE FEATURES OF THE FINGERPRINT AND A MULTITUDE OF DIFFERENT ATTRIBUTES OF THE PERSONAL SIGNATURE. THE USE OF THIS BIOMETRIC DATA HAS MADE IT POSSIBLE TO IDENTIFY AND VERIFY ANY ARBITRARY PERSON.

ed equipment such as laptops, iris scanners, fingerprint today's market. readers and cameras to capture the biometric data.

Each country can capture these attributes and personal Mühlbauer also provides the software that enters the data Insight: Our MB enrollment software is a flexibly designed

data in so-called enrollment centers. Mühlbauer helps to into the systems, manages it, and later passes it on to the system, which is also able to import batch data from exset up these stations - either decentralized, spread all machines for production of the identity documents. Pay- ternal sources. The information can be handwritten as well over the country, or centralized, depending on the proj- ment processes can be integrated easily. This software is as machine generated - the application recognizes every ect's structure. The German specialist delivers the need- the most advanced data enrollment package available in word or number without any problems. Captured pictures can be enhanced automatically or manually to meet ICAO standards. The smart software also manages it to remove backgrounds from pictures and fingerprints and replaces them automatically with an appropriate one. Even the signature is automatically extracted, defined and enhanced here. Our system supports 1D and 2D barcodes.





DATA MANAGEMENT

PERSONAL DATA IS ONE OF THE MOST VALUABLE GOODS OF A NATION. THEREFORE, IT MUST BE ADEQUATELY PROTECTED WHILE AT THE SAME TIME MADE STRAIGHTFORWARDLY ACCESSIBLE TO SELECTED AUTHORITIES TO ENABLE SECURE VERIFICATION AND AUTHENTICATION.

After we captured the demographic and biometric data of either store or match it with already existing information. theft. The tool can be connected to other data sources or a person during enrollment process, it has to be protected Only authorized persons are allowed to access the data registers and features several functions to search docuand administrated reliably. The MB secure management and always need a security certificate to enter the system. ments, reporting statistics or handling conflicting applicasystem encrypts the collected datasets according to the Status or data modifications are logged and traceable to tions. Data backups and recovery mechanisms are also latest standards and transfers it to selected databases to prevent any form of abuse, counterfeit or even identity available.





PRODUCTION

THE COMPLEXITY OF ID DOCUMENTS CONSTANTLY INCREASES. GROWING SECURITY NEEDS AS WELL AS ORGANIZED DOCUMENT FRAUD DEMAND THE CONTINUOUS ENHANCEMENT OF SECURE DOCUMENTS. AS ONE OF ONLY A FEW CHOSEN COMPANIES WORLDWIDE. WE ARE CERTIFIED AS SECURITY PRINTER AND SECURITY SUPPLIER BY INTERGRAF AND CONSEQUENTLY HOLD SIGNIFICANT EXPERTISE IN THE DEVELOPMENT OF CUSTOMIZED ID SOLUTIONS.

develops all machines according to individual customer requirements. Even in retrospect, any production can be offers modular systems.

on large sheets, binded together and stamped out to be dividually and joined together at the end to form a whole. more flexibility.

Following the prepared and agreed concept, Mühlbauer assemble to a booklet. Both the holderpage of a passport Insight: Our complete production is monitored by our MB and the ID card usually consist of several layers made Production & Process Management Software. The smart from different material and with different functions. These factory system allows the collection of complete real-time easily extended or supplemented, as Mühlbauer mostly can be printed layers for design and security features, lay-production data and thus enables total transparency. With ers with copper wire as antenna for contactless connec- its interface to observe and analyze the production pro-Our identity document production machines initially create tion, or protective layers against counterfeiting and ma-cess, it supports the planning and optimization, and gives the blank documents, which can be booklets, like pass- nipulation. If a chip is to be inserted into the document, a the operator the possibility to control all important factors ports, or cards, such as ID or license cards. Passports small hole is usually milled in one of the layers to embed such as the cost drivers or reject rate. Under secure acare composed of one holderpage, several visa pages and the chip securely. For the passport, the chip can also be cess, the system can also be reached and managed on a cover. In the production process, all pages are prepared integrated into the cover. Each layer is manufactured in-





PERSONALIZATION

A PERSONALIZED ID DOCUMENT IS THE KEY TO IDENTIFY AN INDIVIDUAL. BY TRANSFERRING BOTH THE PERSONAL AND THE BIOMETRIC DATA TO THE BLANK DOCUMENT, THE ID CARD, THE PASSPORT OR THE LICENSE BECOMES UNIQUE. THIS IS THE ONLY WAY TO ACHIEVE A RELIABLE VERIFICATION.

the MB personalization unit. Each produced passport has with the picture of the holder – in greyscale or in color, inspection system. After the personalization, the smart a holder page, the first and most important page, to be depending on the costumer's wishes - and with the depersonalized. For cards such as ID or license cards, the mographic information. In the same personalization unit, and quality and sorts out the rejects. front and back are filled with the personal and biometric the integrated chip can be fed with further biometric data. To directly send the finished ID document to its holder, start the personalization process.

The blank documents come from the production line to Insight: Each document is going to be laser engraved All Mühlbauer machines can be equipped with a camera foil lamination.

vision system checks the finalized product for accuracy

data. The software of the personalization unit connects to such as fingerprints or iris scans by contactless chip en- Mühlbauer also offers Mailing Systems, which automatithe database, where all datasets have been stored during coding. When holderpage or card are filled with all rel-cally stick the document onto a letter, pack it into an enenrollment, and thus retrieves the needed information to evant information, they can be protected through security velope and print the holder's address on the envelope ready to be sent out.





VERIFICATION

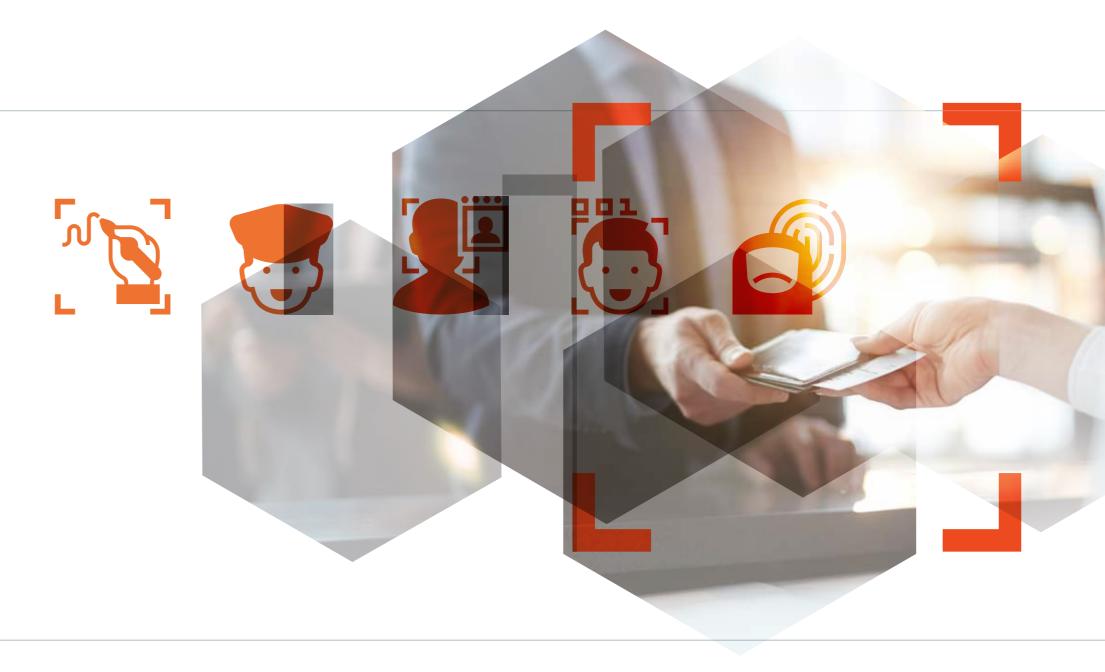
INTERNATIONAL TRAVELER VOLUMES RISE ON A DAILY BASIS. A MULTIPLICATION OF AIRPORT ARRIVALS AND DEPARTURES. ILLEGAL MIGRATION AND ORGANIZED CRIME LEADS TO GREATER CHALLENGES IN THE GLOBALIZED WORLD. RELIABLE VERIFICATION SYSTEMS BECOME ESSENTIAL TO COPE WITH THESE TRENDS.

tems with different stations to verify persons and their nected database to check for authenticity. realized seamlessly and hassle-free.

In addition to the creation process of a highly secure Insight: The MB iKiosk enables travelers to check them- traveler passes without physical contact. This achieves identity document, Mühlbauer also covers the need for selves in at airports. The kiosk can read electronic pass- the highest standards of hygiene and minimizes the error verification equipment for border controls, airports and ports and ID cards, and is able to take a picture of the rate at the same time. checkpoints. Mühlbauer developed comprehensive sys- holder and compare it with the read data and the con- For road checks or checkpoints without suitable infra-

ID documents after national and international standards. Our MB FastGate receives the check-in information from a mobile application for standard mobile devices such as With these smart MB solutions, waiting times can be sig- the iKiosk and verifies with the integrated cameras and smartphones or tablets. This easy-to-use solution is able nificantly reduced and travel and border crossings can be sensors whether the person is allowed to pass through. to verify the electronic Machine Readable Travel Docu-The highly flexible system design allows for a tailor-made ment (eMRTD) by comparing the read data on the one solution according to the client's requirements. Manual hand with databases or stop-lists and on the other hand intervention is possible at any time, but in most cases, the with the real person, e.g. via facial recognition.

structure or with insufficient space ratio, Mühlbauer offers



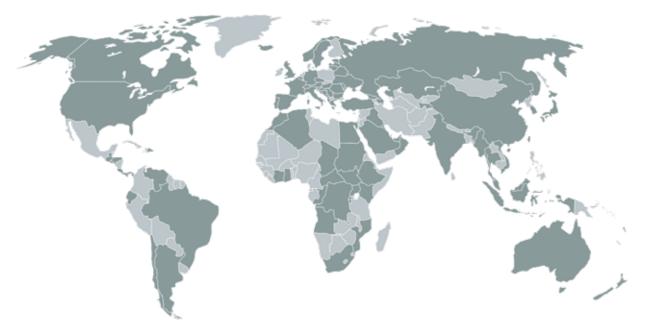


REFERENCES



GLOBAL REFERENCES

300 ID PROJECTS WORLDWIDE



As one of the world's leading single-source providers of innovative and high-end security solutions, we are currently involved in more than 300 ID projects worldwide. Our successful projects range from basic solutions up to the most complex BOT-projects (Build-Operate-Transfer), including the development of a multitude of documents, vast hardware and software infrastructure measures, comprehensive trainings, as well as extensive service.

With the successful completion of numerous projects, we have developed decisive know-how and experience in defining and implementing tailor-made solutions that meet our clients' individual requirements. We do not only deliver the customized high-end systems. More importantly, we also accompany our clients before, during and after the project. We are proud to support various nations on all five continents to further enhance their security infrastructure.

KEY REFERENCES



PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
National ID Card, Driver's License & Vehicle Registration



REPUBLIC Civil Registry REPUBLIC OF ANGOLA



ARGENTINE REPUBLIC Fast Gate Solution for International Airport, Land border & Seaports



COMMONWEALTH OF AUSTRALIA ePassport Personalization



BOSNIA & HERZEGOVINA
Driver's License, National ID Card & ePassport



REPUBLIC OF CHAD
National ID Card, Residence Card & ePassport



REPUBLIC OF THE CONGO National ID Card, ePassport & Tax ID Card



REPUBLIC OF EL SALVADOR National ID Card, Mobile ID



REPUBLIC OF FIJI ePassport



GEORGIA

National ID Card & MB FastGate



REPUBLIC OF GHANA
Enrollment & ePassport Personalization



GIBRALTAR
National ID Card & Driver's License



REPUBLIC OF GUATEMALA
National ID Card



REPUBLIC OF HONDURAS

National ID Card Personalization & Mailing



REPUBLIC OF IRAQ
Driver's License & Vehicle Registration



ITALIAN REPUBLIC
Driver's License



REBUBLIC OF KENYA eID Cards



STATE OF KUWAIT ePassport Personalization



REPUBLIC OF LEBANON
Driver's License, Vehicle Registration & ePassport



REPUBLIC OF MOLDOVA MB FastGate



MONTENEGRO
National eID Card, ePassport, Driver's License, Multi-Purpose cards



REPUBLIC OF MOZAMBIQUE National ID Card & ePassport, Driver's License



SULTANATE OF OMAN MB FastGate



KINGDOM OF SAUDI ARABIA National ID Card



REPUBLIC OF SERBIA
MB FastGate



REPUBLIC OF SOUTH AFRICA Enrollment for Driver's License



REPUBLIC OF SOUTH SUDAN
National ID Card, ePassport & Vehicle Registration











PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

NATIONAL ID CARD, DRIVER'S LICENSE & VEHICLE REGISTRATION

The ID card personalization project of Algeria was award- facility's efficient operation. After the successful compleed by the Ministry of the Interior and of Local Authorities tion of the first project, Mühlbauer was engaged for a foland started in August 2015. Mühlbauer closely cooperat- low-up project in 2016: the delivery of a complete Smart ed with the Ministry to deliver card personalization equipment and a production and personalization management to 5 million national driver's licenses and vehicle registrasystem for two personalization centers in Algiers and La- tion cards per year. The project included the delivery and ghouat. The centers have been equipped to personalize setup of the complete plant, the development of a security the new Algerian ID Card by laser engraving (image and concept, the systems for card body production, laser prepersonal data of the card holder) and chip encoding on a personalization, inspection and personalization with the hybrid card. To interconnect the production and personal- MB ALFRESCO® technology, as well as the installation of ization management with the existing infrastructure and to the proven production and personalization management ensure a smooth implementation, Mühlbauer coordinated system MB INCAPE. Besides, a comprehensive service with local partners. During the first year of operation, package was included: customer staff received an all-Mühlbauer provided supervision staff at site to support inclusive training and Mühlbauer delivered the know-how the ramp-up. Moreover, the local staff received a compre- transfer to enable the smooth operation after hand-over, hensive training on the systems, in order to guarantee the including the new production unit DIN ISO certification.











Documents
 Hardware
 Software

MB SCP 801

MB ALFRESCO® PICTURE

REPUBLIC OF ANGOLA

CIVIL REGISTRY

for the National Resident Card. The polycarbonate chip of official documents. card with laser engraved technology is required by For- 17 decentralized MB DEOS-sites have been established to eign Residents of Angola for a period of 3-5 years, similar process the collected data and send it to designated notato a working permit.

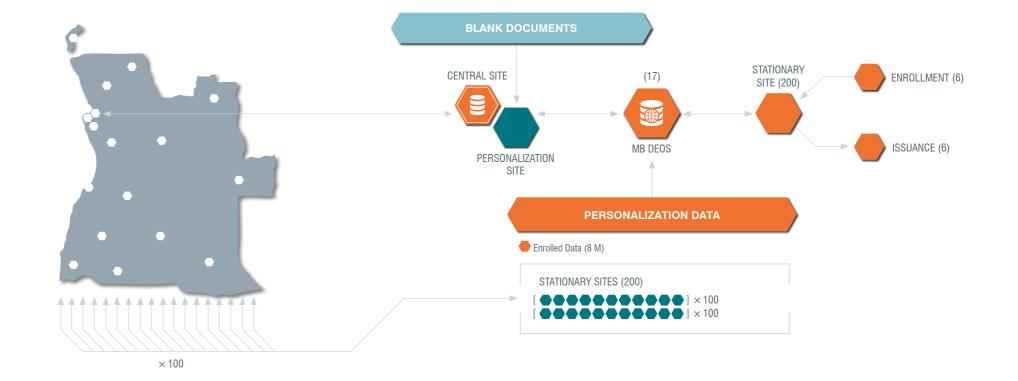
optimize the interoperability between ministries through a registration. reliable database. Mühlbauer worked in close cooperation Once an applicant's data has been enrolled, a confirmacitizens.

hardware and software infrastructure comprising about people in a minimum of time.

In 2010, the Resident Card Project was launched by the 200 decentralized enrollment sites which are equipped Ministry of Migration and Foreign Services (SME) of An- with a total of 525 easy-to-operate MB GET-ID systems. gola. Together with a partner company, Brithol Michcoma, They enable the comprehensive capturing of the appli-Muehlbauer supplied the machines and personalization cants' demographic and biometric data and the scanning

ries for verification. Thus, it is ensured that the registered individuals are legal citizens of the Republic of Angola. The civil registry project of the Republic of Angola, award- The verified data is stored in the central national register in ed by the Ministry of Justice and starting in 2014, was Luanda. It manages all data to avoid duplicated identities designed to improve security standards in Angola and and handles all relevant registration steps such as birth

with its partner on site to provide the complete infrastruction letter is issued. It is valid as soon as the data has ture for an accelerated and secure national registry of all been verified and serves as a breeder document for further ID documents. Due to extensive training, the local Within only six months, Mühlbauer provided the complete staff has been enabled to autonomously register 8 million









Customized MB GET-ID MOBILE Centralized Server Structure

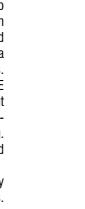
Documents
 Hardware
 Software

COMMONWEALTH OF AUSTRALIA

ePASSPORT PERSONALIZATION

The Australian ePassport project was awarded by the De- with high-volume personalization equipment were set up seamless integration of the new system into the existing datasets. infrastructure, the supply of the complete line consum- The finalized documents are issued to the applicants by ables for the project, the training of local staff, which was means of secure, high-speed passport mailing systems. provided by experienced on-site staff, as well as the pro- Applicants can directly collect the finished documents in vision of full-time local maintenance and service support. the domestic and foreign state offices. For the personalization of the ePassports, two centers

partment of Foreign Affairs and Trade (DFAT) in 2013: The in Melbourne. Additionally, documents are personalized in project was supposed to both renew all personalization nine domestic and two foreign state offices in London and equipment and introduce a comprehensive solution (in- Washington D.C., which are all linked to the central data cluding quality print and lamination of data pages) for an site and equipped with desktop personalization systems. average annual volume of 2.5 million ePassports. Thanks In the course of the personalization process, MB INCAPE to a previous successful cooperation, Mühlbauer was collects the datasets from the central secure document designated to provide the complete personalization hard- management system, transfers them to the personalizaware and software, as well as the personalization man-tion center and prepares them for further processing. agement system. The 5-year project also included the Then the ePassports are personalized with the prepared



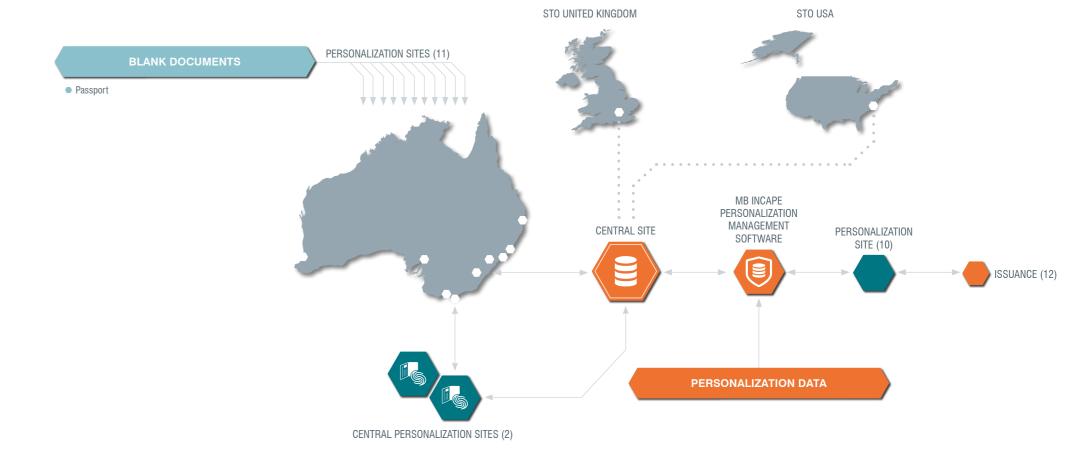












FREE STATE OF BAVARIA

POLICE CARD

After the introduction of a new blue uniform for the elD cards with a 3-tiered high-security concept, compa-Bavarian Police, the Ministry of Interior decided rable with national ID cards. to also update the old paper-based ID. Mühlbau- The data is provided by the central database of the Bavarbauer was selected as the successful bidder.

for a design that captures the pride of the Bavarian people provided by Mühlbauer for this project. and its police force. In total, the project includes 100.000

er entered the competition and showed its speed, ian Police and enhanced by the Personalization Managehigh quality and flexibility, especially during the ment System, MB INCAPE. This includes the derivation challenging proof of concept phase. Subsequently, Mühl- of the electronic chip data as well as enhancement of the holders' picture through the Artificial-Intelligence based The project includes the production of three different software MB Image Enhancement. The personalization cards, representing the different employees of the Bavar- data-sets are distributed to the two decentral personalizaian Police. Mühlbauer developed different card design tion sites, which are equipped with state-of-the-art Mühproposals based upon the Corporate Identity of the Ba- Ibauer CLP 60 laser personalization machines. For the varian Police as well as the desires discussed during the electronic personalization, the machines access the Key project Kick-Off meeting. The Minister of Interior settled Management Solution and the hardware Security Modules





MB CLP 60







Police ID Card Employee ID Card Retiree ID Card 36|37

PERSONALIZED DOCUMENTS

PERSONALIZATION

MB INCAPE

CENTRAL SITE

BLANK DOCUMENTS

IMAGE ENHANCEMENT

Documents
 Hardware
 Software

KEY MANAGEMENT SYSTEM

BOSNIA & HERZEGOVINA

DRIVER'S LICENSE, NATIONAL ID CARD & ePASSPORT

The Agency for Identification Documents, Registers and The Bosnia & Herzegovina ID card has successfully been Data Exchange of Bosnia & Herzegovina (IDDEEA) has issued since March 1st, 2013. The third-generation ePassselected Mühlbauer to deliver the hardware and software port with Supplemental Access Control (SAC) started to for the production of ID-1 card bodies and ePassports. The card and passport production processes are managed by the Mühlbauer production management system personalized in line with the latest technology for color MB INCAPE and the material management system MB images on ID documents and stored in one of the inside WAREHOUSE, which are located at the Mühlbauer pro- layers of the polycarbonate, thus preventing any possible duction facility in Banja Luka. They are responsible for misuse. All personal data and machine-readable zones planning, processing, controlling and handling all produc- are laser-engraved in the second inner layer of the polytion orders and material for the card and passport production center.

be issued on October 1st, 2014. For both the card and are stored within the chip module in a digital and highly secure manner.











National ID Card - Front

National ID Card - Back



ePassport Booklet

ePassport Holderpage



38|39



Various types of

Passports & ePassports

REPUBLIC OF BULGARIA

ePASSPORT & NATIONAL ID CARD

the necessary equipment to complement the existing infor electronic identification and authentication. frastructure.

The 10-year agreement, starting in 2024, includes the The new generation of Bulgarian identity documents with the current central data infrastructure will be replaced by standards.

In order to enhance national security and streamline ad- Mühlbauer without interrupting operations and Mühlbauer ministrative processes, the Bulgarian Ministry of the In- will deliver enrollment hardware and install a Public Key terior has awarded Mühlbauer a contract to set up a new Infrastructure. A key element of this partnership for the personalization center for its Identity Documents and Bulgarian citizens will be the development, integration and Driving Licenses in Sofia and to supply the country with maintenance of a Mobile Application to enable residents

development of state-of-the-art identity documents, the RFID chip and advanced security features will be among establishment of a centralized personalization system the most secure documents within the European Union, and the installation of a forensic laboratory. Over time, complying with the latest EU regulations and international











National ID Card – Front National ID Card – Back

Residence Card – Back

MB INCAPE PERSONALIZED DOCUMENTS MB USER MANAGEMENT STATIONARY ENROLLMENT, ISSUANCE & VERIFICATION (237) MOBILE ENROLLMENT MB GET-ID (135) PERSONALIZATION DocumentsHardwareSoftware CENTRAL SITE

PERSONALIZATION

MB SCP 801 (3)

MB CARD PACK

MB QUICK PACK

MB IDENTIFIER 6000 (3)

BLANK DOCUMENTS

Passports

ID Cards

(14 different types)

(16 different types)



REPUBLIC OF THE CONGO

NATIONAL ID CARD & ePASSPORT

The Congolese identity project, awarded by the Ministry of managed by the central database SDM. The high-secure Interior and starting in late 2011, comprised the develop- blank documents, produced and delivered from Mühlbaument and implementation of the customized infrastructure er Germany, are personalized in three sites in the capital for the issuance of high-secure ID documents. Serving as Brazzaville, in Oyo and Pointe-Noire. From there, the fina model example for the setup of a complex system, this ished documents are forwarded to the decentralized sites solution includes an extensive range of documents. Along for issuance. 33 embassies abroad have been equipped with the existing database, the registry forms the basis of with units providing for enrollment, personalization and isthe complete national census of all citizens.

suance of visas, substitute passports and consular cards. The project started with comprehensive consulting and Another part of this successful project is the police card the development of the system architecture involving solution, involving the complete hardware and software the setup of 800 decentralized mobile MB GET-ID enroll- infrastructure for the registry and issuance in five decenment units. 105 decentralized MB DEOS-sites collect and tralized offices, as well as the central database and the process the data. From there, they are transferred to and personalization of the blank documents in Brazzaville.











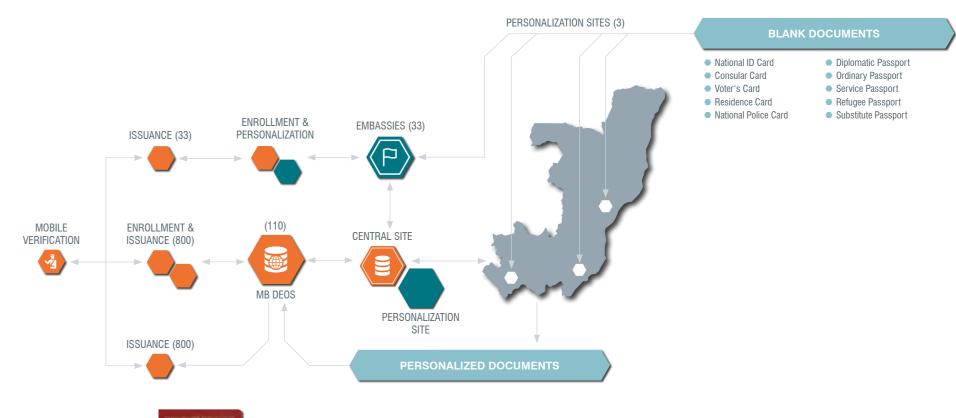
Police Card













Mobile Verification





ePassport Booklet

DocumentsHardwareSoftware

42 | 43

REPUBLIC OF THE CONGO

TAX ID CARD

In early 2018, after the successful collaboration in the issusoftware components MB SDM and MB ABIS. Within 48 Republic of the Congo awarded Mühlbauer another flag- plicant receives an electronic document with a unique tax identification and life cycle of all the country's tax payers, chip-based Tax ID Card is personalized in two personal-Mühlbauer – in close cooperation with the Congolese Minization sites (in Brazzaville and Pointe-Noire) by one of istry of Finance and Budget – developed a solution for the four personalization machines with state-of-the-art laser issuance of high-secure biometric Tax ID Cards.

In ten enrollment stations across the country, private individuals as well as legal entities can get enrolled for the Once the biometric Tax ID Cards have been issued, they applicant's demographical data and biometrics (finger-payer's identity. print and iris) are used to secure the identification pro- Via a third-party interface, the biometric Tax ID Card isbe detected by the sophisticated combination of the two customs or banks.

ance of the Congolese National ID Card and ePassport, the hours – as required by international standards – the apship project: In order to reliably support the registration, ID via email (in PDF format) or SMS. In a second step, a engraving and chip encoding technologies, and an overall

tax card via dedicated MB GET-ID enrollment systems. are handed over to the applicant and can be used on veri-Enrolled applications are then forwarded to the main data fication devices for the visualization of the data digitally center, where a unique tax payer's ID is generated. The stored on the chip, as well as for the verification of the tax

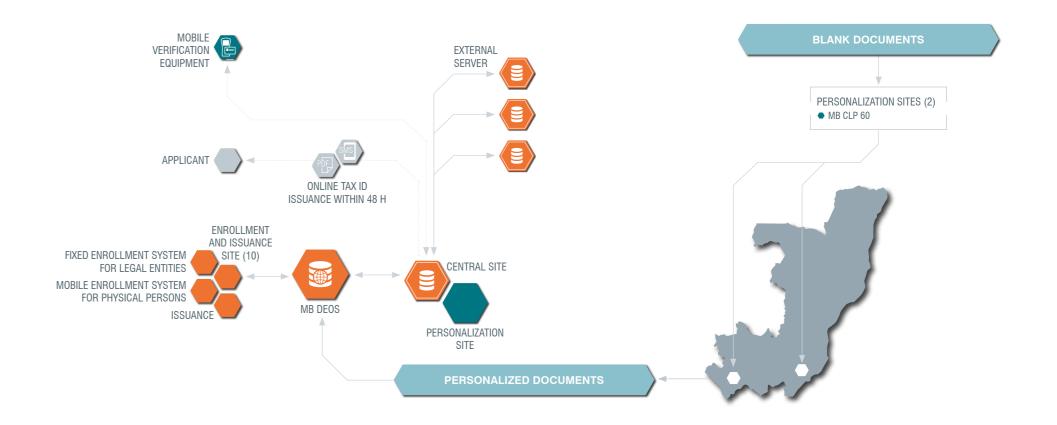
cess and thus guarantee the tax ID's uniqueness. Mul-suance system also offers the possibility to securely extiple registration attempts and other inconsistencies can change data with external entities such as tax authorities,











Tax ID Card - Front Tax ID Card - Back Documents
 Hardware
 Software



REPUBLIC OF EL SALVADOR

NATIONAL eID CARD, MOBILE ID

In 2011, Mühlbauer was awarded by the Government of Today, Mühlbauer employs over 250 people in El Salva-El Salvador to implement and operate a comprehensive dor. Mühlbauer El Salvador, with its qualified staff, is the National ID Card Solution for the inhabitants of El Salva- backbone for all Mühlbauer operations in Central America. dor. The solution comprised twenty enrollment-, person- In 2021, the government of El Salvador signed a new Mühlbauer enabled 16 El Salvadorian consulates in the Mühlbauer implemented a new polycarbonate ID card USA and Canada to receive applications and issue Na- with multiple laser image (MLI), which carries the laser tional ID Cards to El Salvadorian citizens.

international) via MB DEOS, as well as personalization picture, as it is applied on different layers of the card. Operate-Transfer (BOT) project.

than 6.2 million cards between 2015 and 2020.

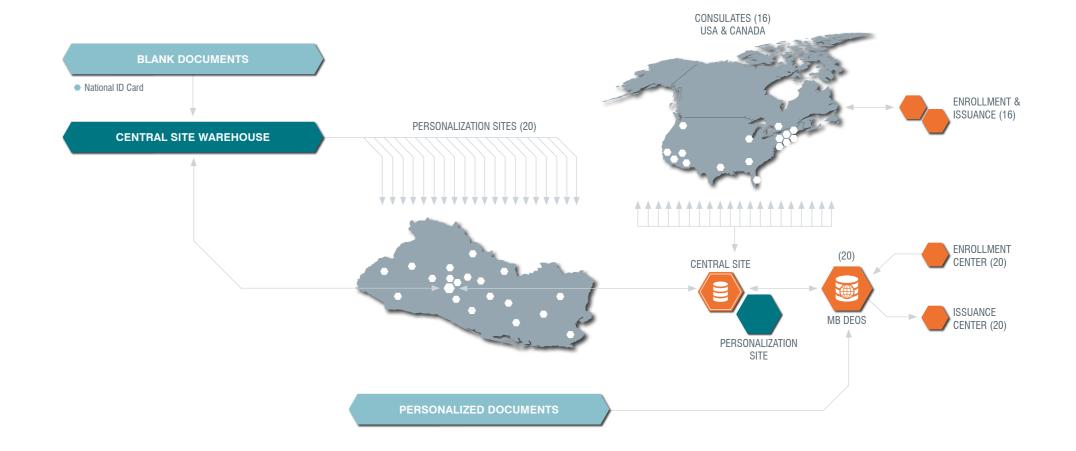
alization- and issuance offices in El Salvador. In addition, contract to introduce further innovative technologies. engraved birthdate and portrait of the cardholder. The per-The scope of the solution includes the actual ID card, approval and issuance clients, a national database, a bio-technology, a combination of laser engraving and inkjet metric system, a data and document management sys- printing for the portrait of the owner. This secures the tem, secure communication with all sites (national and document as forgers cannot easily remove or alter the machines and software. The project is based on a Public In the next step, Mühlbauer extended the physical card

Private Partnership agreement and executed as a Built- into a mobile ID. Therefore, Mühlbauer developed the MB Steel Reader app, a mobile application which holds the In June 2015, the BOT-project was renewed for five ad- information of the physical document. This information ditional years. Within the scope of the contract extension, can then be shared with institutions in private and public the second generation of ID cards with enhanced security sectors, electronically. The new hardware to enable the features was issued. El Salvador was able to issue more digital changes also comprised self-enrollment kiosks distributed all over the country.





National eID Card – Front National eID Card - Back



Documents
 Hardware
 Software

REPUBLIC OF FIJI

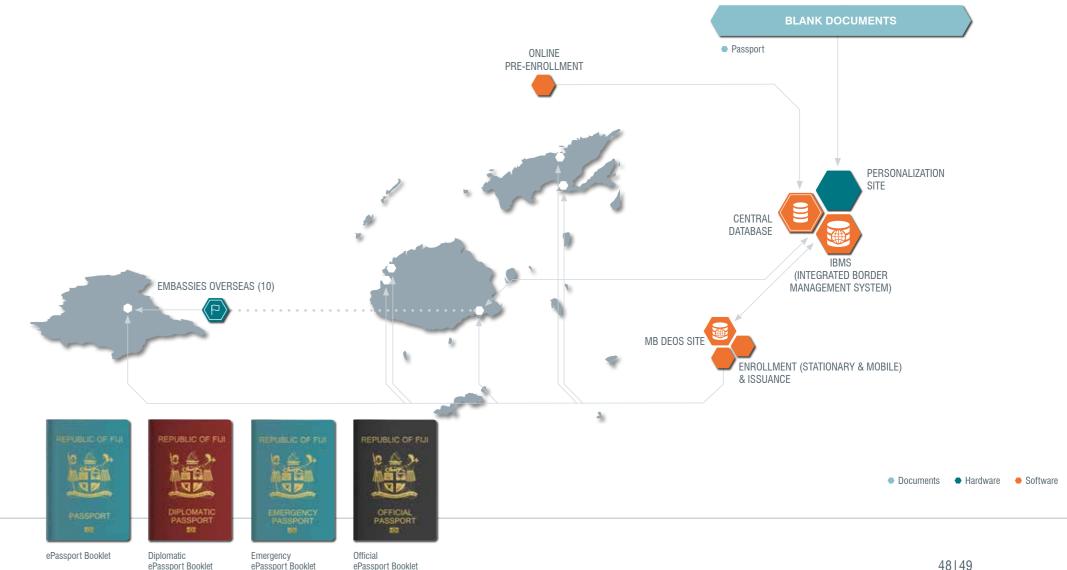
ePASSPORT

security infrastructure, the Republic of Fiji decided to public of Fiji's Border Management System (IBMS) into evolve its next generation of passports to ePassports. the new ePassport system. That is why, in 2019, the Fijian Government selected Citizens of the Republic of Fiji can pre-register for the Mühlbauer to trustfully handle and implement a custom- enrollment online before they perform the live enrollment ized, high-secure solution for the personalization and process in one of the countrywide 5 enrollment offices issuance of state-of-the-art ePassports. The project which are each endowed with stationary high-tech enrollcomprises the specification, customization, delivery and ment equipment. The DOI can also resort to mobile enrollinstallation of the necessary IT and security infrastruc- ment kits that enable a transportable means of registrature (hard- and software) for the personalization (print- tion. The applicant's data are then collected in one of the ing) and issuance of four types of ePassports (Ordinary MB DEOS sites and processed to the central database in ePassport, Official ePassport, Emergency ePassport & the country's capital Suva. Diplomatic ePassport). Furthermore, Mühlbauer provided The blank documents are then personalized at the central services such as consulting, comprehensive know-how personalization site in Suva and sent to the respective aptransfer by conducting trainings for the local staff of the plicant by letter. In oversea embassies, Fijian citizens also Fijian Department of Immigration (DOI), as well as pro- have the possibility to enroll for an ePassport. duction support, service and maintenance. Additionally,

As a part of its major project to modernize the country's Mühlbauer integrated the existing infrastructure of the Re-









GEORGIA

NATIONAL ID CARD & MB FASTGATES

The national identity project of Georgia was awarded by tion technologies and mailing systems for the issuance but it also holds an embedded chip for different services to the three personalization sites. like digital signature, eBanking, eHealth, access control, In 2011, the follow-up project was awarded by the Minpayment function and public transport applications.

these centers were equipped with the latest personaliza- register and several alert lists.

the Public Service Development Agency of the Ministry of of the finished documents. Five MB GET-ID MOBILE units Justice and started in 2010. The introduction of the most were added to the existing network of decentralized enadvanced eID card worldwide set a milestone in the field rollment sites. Mühlbauer produced the high-secure blank of ID document solutions. The polycarbonate dual inter- documents in Germany and quarterly delivered them to a face card does not only serve as a national ID document, central warehouse in Georgia. They were then distributed

istry of Internal Affairs: the implementation of Automated This project is an outstanding example for the seamless Border Control units at the higher frequented Georgian airintegration of established standards and latest innova- ports of Tbilisi, Batumi and Kutaisi, and at four pedestrian tions into an existing infrastructure. The system architecture was enhanced by a centralized personalization Georgian citizens includes the matching of an individual's site in the capital city and two decentralized sites; all of personal data with a variety of databases like the citizen











Automated Border Control (ABC)

PERSONALIZATION SITES (3) AIRPORT BORDER CONTROL BLANK DOCUMENTS National ID Card ABC Unit - Kutaisi (2) ABC Unit - Tbilisi (3) ABC Unit - Batumi (1) INTERNATIONAL & CENTRAL SITE NATIONAL DATABASES MB DEOS PERSONALIZATION PEDESTRIAN BORDER CONTROL PERSONALIZED DOCUMENTS ABC Unit - Sarpi (2) ABC Unit - Red Bridge (2) ABC Unit - Sadakhlo (2) ABC Unit - Vale (2)

Documents
 Hardware
 Software

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REPUBLIC OF GHANA

ePASSPORT PERSONALIZATION & INSTANT ISSUANCE

The ePassport issuance solution project for the Repubios securely transferred to the central database by means lic of Ghana started in 2015. It has set a new worldwide of the latest encryption technologies. All newly captured standard as it is the first solution which includes decendata and all acquisition processes are registered in the tralized personalization on site and instant issuance of the national database granting full transparency to the Ghanafinished ID documents outside the home country. Within ian institutions worldwide. Within a short space of time, only two months, six sites have been set up in embassies the blank ID documents can be personalized with the apin Europe, North America and South Africa. The Ghanaplicant's prepared dataset by means of high-end desktop ian embassies act as decentralized centers where citizens personalization equipment. Before the finished document can apply for new documents and have their complete is handed over to the applicants, they have to be verified demographic and biometric data enrolled. All centers are once again. For this purpose, MB GET-ID MOBILE collects connected to the governmental national database in the the citizen's live data and matches them with the stored capital Accra. There, the applicants' captured data are data. Within the smallest amount of time, Ghanaian citichecked to ensure that they are legal citizens. The data zens are provided with their new ID documents.





EMBASSIES USA EMBASSY GERMANY EMBASSY ITALY EMBASSIES IN FURTHER COUNTRIES EMBASSY UNITED KINGDOM EMBASSY SOUTH AFRICA PERSONALIZED DOCUMENTS EMBASSY (6) **BLANK DOCUMENTS** ENROLLMENT (6) Passport CENTRAL SITE ISSUANCE (6) PERSONALIZATION SITE

Documents
 Hardware
 Software

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MB GET-ID MOBILE

MB IDENTIFIER 6



GIBRALTAR

NATIONAL ID CARD

The ID card project for HM Government of Gibraltar fea- ing environment. Local staff received extensive training provide a high-secure biometric ID (and travel) document by Mühlbauer. which significantly simplifies government services for cit- The enrollment centers are equipped with 10 MB GET-ID izens. The eID card ensures the secure log on to a newly systems which capture the demographic and biometric (fadeveloped web portal to access all electronic services. cial image) data. After the enrollment, the data is processed Moreover, the eSignature functionality makes it possible and transferred to the personalization management system to digitally sign electronic documents. The eID card also which initializes the personalization of the blank document allows free access to education centers, libraries, parking by laser engraving and chip encoding. The customized and public transport. The new ID card itself is a highly personalization systems, which have already been used durable PC (polycarbonate) card with outstanding secu- for the personalization of Gibraltar's driver's licenses, were rity features. It is issued to the applicants only after their upgraded with chip coding and vision inspection modules existing documents have expired.

infrastructure and seamlessly integrated it into the exist- receives the new ID card within a few days.

tures Mühlbauer's most advanced ID card with a variety in advance to ensure the smooth operation during the of integrated services. The idea behind the project was to ramp-up, which was also accompanied and supported

to enhance their functionality. After the identity is authen-Mühlbauer provided the complete hardware and software ticated at the enrollment and issuance center, the citizen



Civilian Registration Card EU – Front



EU - Back

Civilian Registration Card Civilian Registration Card Non-EU - Front



Civilian Registration Card Non-EU – Back



PERSONALIZATION MB INCAPE **PRODUCTION** MANAGEMENT ENROLLMENT SITE PERSONALIZATION MANAGEMENT **ENROLLMENT** MB MCES BLANK DOCUMENTS PERSONALIZED DOCUMENTS ISSUANCE (National eID Card Civilian Registration Card EU Civilian Registration Card Non-EU CENTRAL SITE MB INCAPE PERSONALIZATION WAREHOUSE

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Documents
 Hardware
 Software

REPUBLIC OF GUATEMALA

ID CARD & RESIDENT CARD

Republic of Guatemala awarded Mühlbauer for the deliv-support for a seamless card personalization process with ery of an overall of 6 million pre-personalized identifica- the desktop card personalization system MB SCP 60 and tion documents (DPI) used for the Guatemalan ID and the mid-volume personalization system MB SCP 1500. Resident Card.

well as with PKI and an ICAO ID and travel applet.

Mühlbauer pre-personalizes all high-secure cards and the Thus, Mühlbauer has meanwhile received its 6th order in ny headquarters in Roding (Germany) and delivers them man company with the Central American country. in batches to Guatemala. At the RENAP headquarters in

In 2016, the National Registry of Persons (RENAP) of the Guatemala-City, Mühlbauer also provides all necessary

In 2022, Mühlbauer received the assignment to upgrade As main solution partner, Mühlbauer ensures the provision the current ID card, which shows a greyscale picture of of polycarbonate Smart Cards in ID-1 format. According the holder, with a state-of-the art ID card with full colour to the international standard ISO 7810: 2003 Identifica- picture. The sophisticated MB ALFRESCO® PICTURE tion Cards, all cards are equipped with a contact-based technology smartly combines color picture personalizachip with an EEPROM of 80 KB. The multi-application tion with laser engraving, achieving highest protection card is endowed with a Match-on-Card applet, which enagainst counterfeiting. In 2023, new SCP 2000 smart ables convenient and secure fingerprint authentication, as card personalization systems will be delivered to Guatemala and a new PKI system will be installed.

chips they contain at the Technology Center at the compa- 8 years, which proves the good cooperation of the Ger-







ID Card - Back

ID Card - Front



SCP 2000

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Documents
 Hardware
 Software

REPUBLIC OF IRAQ

DRIVER'S LICENSE & VEHICLE REGISTRATION

The Iraqi driver's license and vehicle registration project the production site at Mühlbauer Germany to a central started in 2010 and represents the exemplary solution warehouse in Baghdad. From there, the documents are for the setup of a complete infrastructure. The solu- distributed to the decentralized sites issuing the comtion comprised a central data site, a disaster recovery plete set of documents, e.g. the vehicle registration card, center in Baghdad and 20 decentralized sites. They are the windshield sticker and the driver's license, along all equipped with live data enrollment hardware and with the license plates. The high-secure software infrasoftware, offline enrollment units for the registration structure comprises the complete data management, of the demographical and biometric data (fingerprint personalization management and data security. and iris), high-end laser for the document personal- The system architecture provides access to the central ization and number plate pressing, as well as, for the data site by authorized governmental institutions via web issuance of the finished documents. The data is regis-portals. Thus, the checking of the individual's complete tered live, then processed and - depending on the distance to the capital city – transferred to the central data ceived handheld devices for car inspections (taking place site either by VSAT or fiber optic. 2 million blank docu- within assigned checkpoints) which are connected to the ments with high-end security features are delivered from central database so that the data can easily be matched.











Driver's License - Front

Driver's License – Back

Vehicle Registration – Front

Vehicle Registration – Back

BLANK DOCUMENTS & MATERIALS PERSONALIZED DOCUMENTS Vehicle Registration Windshield Sticker Driver's License Number Plate ENROLLMENT CENTER (20) CENTRAL SITE **CENTRAL SITE WAREHOUSE** CENTER (20) MB DEOS (20)



VERIFICATION UNITS

ISSUANCE

Documents
 Hardware
 Software

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PERSONALIZATION SITES (20)

Mobile Verification

PERSONALIZATION

VERIFICATION

CHECKPOINTS

REPUBLIC OF KENYA

NATIONAL SMART ID CARD

Mühlbauer successfully implemented the electronic ID ware environment, including MB INCAPE as an integrated card for the citizens of Kenya. This implementation of production management software, the MB PALAMAX® packaging and shipping of the cards. In addition, the soft- 25 million blank cards for the Smart ID project.



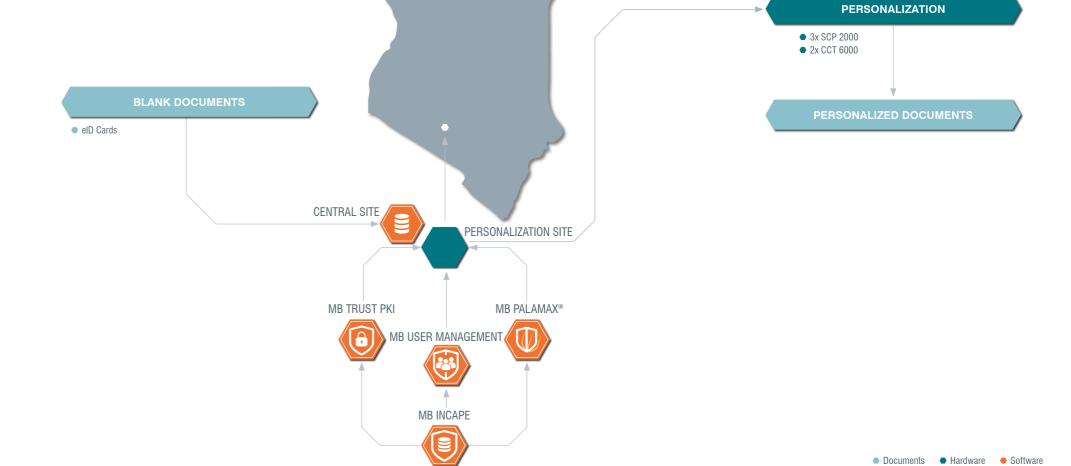








the Smart Card Project, including the layout of the card for monitoring and improving production, the MB USER and other technical aspects, was done within 4 weeks. MANAGEMENT, the MB TRUST PKI and other related IT Mühlbauer delivered MB SCP 2000 machines with MB hardware were successfully implemented. These technol-ALFRESCO® technology for color and laser personaliza- ogies enabled the Kenyan Government to set up a state of tion of the electronic ID card, as well as MB CCT 6000 for the art Personalization Bureau. The Kenyan Government quality assurance of the cards and the MB Quick Pac for further contracted Mühlbauer for the supply of a total of



SCP 2000 ID Card - Front ID Card - Back CCT 6000



ePassport Booklet

ePassport

MONTENEGRO

NATIONAL eID CARD, ePASSPORT, DRIVER'S LICENSE, MULTI-PURPOSE CARDS

The Montenegrin identity project, awarded by the Ministry sonalization by means of MB ALFRESCO® Picture. The of Interior in 2019, is a best-practice example for a comprehensive document solution. It encompasses the delivance of all documents and the set-up of software comery of a high-tech system for the production and persona- ponents, e.g. the enrollment and issuing software MB lization of the next generation of Montenegro ePassports GET-ID, the personalization platform MB INCAPE and a and ID1-format ID cards, driver's licenses and resident Public Key Infrastructure (PKI). All software components permits.

In addition to the development of individual security de- As main solution partner to the government of Montenefor data management and state-of-the art document per- ID documents.

are centralized in the Montenegrin capital Podgorica.

sign concepts for all the ID documents provided, Mühl- gro, Mühlbauer provided all necessary support to ensure bauer ensured the seamless supply of blank documents. a seamless implementation of the project. The system The project's scope also included the delivery of a coun- went live in December 2019 and ever since then the autrywide network of 21 high-tech biometric enrollment thorities of Montenegro can resort to a cutting-edge sysstations and document issuing sites, as well as systems tem for the personalization and issuance of high-secure









National ID Card Multi-Purpose Card

PERSONALIZATION MB INCAPE **BIOMETRIC ENROLLMENT SITES (21)** PRODUCTION MANAGEMENT ENROLLMENT (MB GET-ID BLANK DOCUMENTS PERSONALIZED DOCUMENTS Passports ID cards Driver's licenses Multipurpose cards CENTRAL SITE MB INCAPE PERSONALIZATION WAREHOUSE Documents Hardware Software



ENROLLMENT &

REPUBLIC OF MOZAMBIQUE

DOCUMENT ISSUING SOLUTION AND BORDER MANAGEMENT SYSTEMS. ID CARDS. TRAVEL DOCUMENTS & ELECTRONIC VISAS. DRIVING LICENCES

the highest IT security standards regarding data security, state-of-the-art MB ALFRESCO® color technology. data transfer and data loss.

bases for four independent authorities (citizen data, foreigner data, travel documents and border management) launched in December 2022. which are all interlinked and interoperable for national

In 2018, the authorities of Mozambique awarded a consecurity and information purposes. On a nationwide bacession with a contract period of eight years on the basis sis, the government issues biometric national identificaof a public-private partnership (PPP) model to Mühlbauer. tion cards and electronic travel documents, as well as The project's scope was it to deliver, distribute, install and biometric emergency travel documents for all citizens of ramp-up a state-of-the-art system for the issuance of Mozambique. In embassies and consulates, the issuance multiple types of identification documents for citizens and of travel documents, identification cards and emergency visitors. The project also included a border crossing solution and training of staff. It was to be delivered within a well. For visitors, biometric visa documents can be issued period of just six months after the contract signature. The at all airports and border posts, as well as in consulates management systems were distributed nationwide to 11 and embassies. Furthermore, resident alien cards and provinces and 177 districts, to all 13 airports, to 31 land, biometric emergency travel documents for foreigners as river and sea borders and to 45 embassies and consul- well as United Nation travel documents are produced. ates worldwide. The system can be fully operated online In 2022, Mühlbauer won the tender for the production and offline (depending on network availability) and has and personalization of Mozambican driver's licenses with In the same year, the eVisa was introduced by the technol-The system consists of four independently operable data ogy expert. The matching Internet platform, which makes





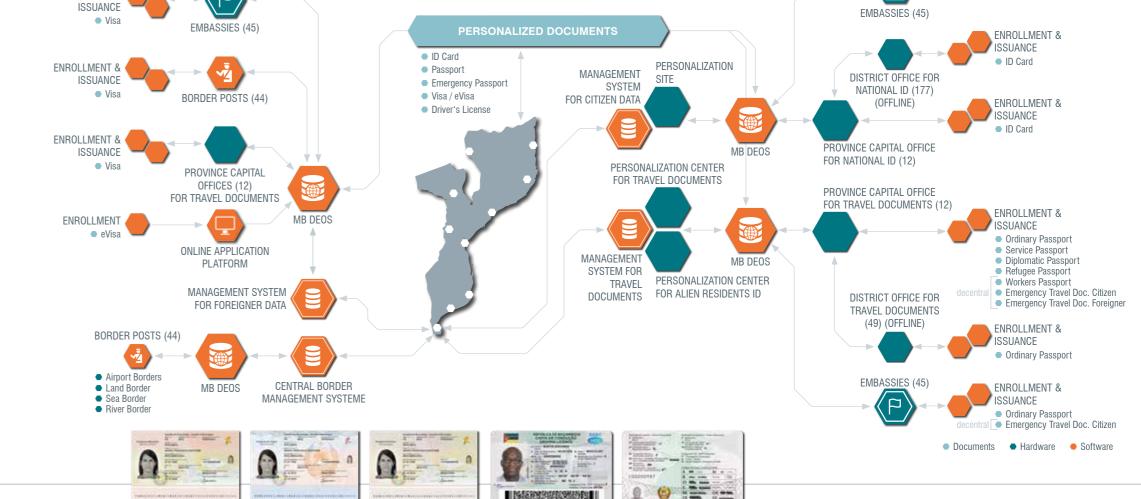












Driving License - Back

Diplomatic Passport Holderpage Refugee Passport Holderpage Service Passport Holderpage Driving License – Front





Resident Card

Visa Sticker

Emergency Certificate

Emergency Certificate Foreigners

Workers Passport

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ENROLLMENT &

REPUBLIC OF PANAMA

ID CARD, VOTERS CARD

The Voters Court of Panama awarded Mühlbauer for a 5 polycarbonate ID cards as well as a state-of-the-art perpersonalize the new polycarbonate Voters Card of Panama. Automatic Inventory Management at customers side. provision of full-time local maintenance and service sup- an on-premise solution to a cloud solution - either cenport. Additionally, Mühlbauer delivers a total of 4.5 Mio trally or locally managed.

years contract to implement a new solution to provide and to sonalization management software and MB INCAPE for The project scope comprised the provision of 2 state-of- In 2024, another personalization site is emerging in the the-art laser personalization machines (SCP801) and set- city of David, the capital of the Chiriquí province. Since the ting up a new state-of-the-art personalization centre in container-based software solution provided by Mühlbauer Panama City including the training of local staff and the is designed to be scalable, it can be easily converted from





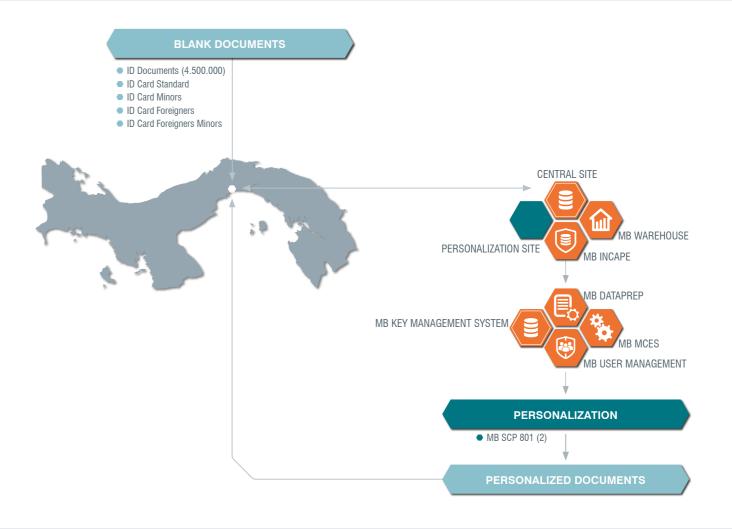












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Documents
 Hardware
 Software

REPUBLIC OF SOUTH AFRICA

ENROLLMENT FOR DRIVER'S LICENSE

ing Licence Card Account (DLCA) of the Department of signature) data. Afterwards, an acuity and peripheral vi-Transport was finalized: It set off a comprehensive project sion test is conducted. The customized units are designed for the provision of the new Live Enrollment Units (LEU) to accommodate all existing back-end system interfaces named "MB GET-ID BOX" for the driver's license applicato ensure seamless replacement. Moreover, a special and tions in South Africa. They replaced the outdated systems intuitive user management was developed. which had been used throughout the whole country for In order to monitor the LEU's activity across the country, over a decade. Mühlbauer was working in close coop- a special control system was set up: It tracks the cooreration with a local company to deliver 1000 LEUs which dinates, makes them appear on a dedicated location map were distributed among 406 Driving Licence Testing Cen- and checks the availably of the units, as well as the entire ters (DLTC) across all nine South African provinces.

in a specially designed casing. The devices capture the systems and to train further operators in turn.

In January 2016, the contract with the South African Driv- applicants' demographic and biometric (face, fingerprint,

infrastructure in terms of failures in applications, servic-The project's central effort was the development of cuses, servers and devices. An additional part of the project tomized units within a short amount of time. These units all was the formulation of a successful change management have peripheral devices, such as scanners, cameras and program. It included the conduction of a comprehensive eye testing systems, permanently and securely installed training to enable the local partners to operate the new



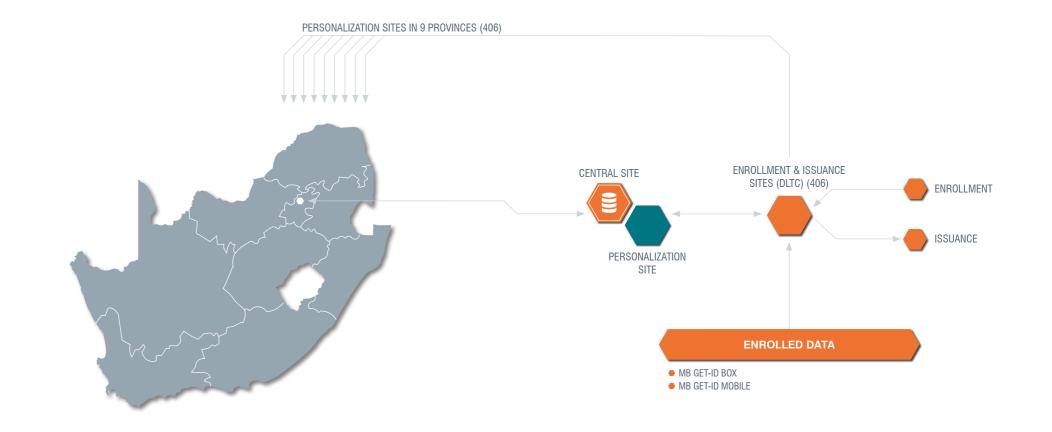


MB GET-ID BOX









Documents
 Hardware
 Software

REPUBLIC OF SOUTH SUDAN

NATIONAL ID CARD. ePASSPORT & VEHICLE REGISTRATION

The South Sudan BOT-project (Build-Operate-Transfer), The infrastructure comprises the central site, located in ensure an autonomous operation of the system.

awarded by the Ministry of Interior in 2011, is the best- the capital Juba, which processes and manages data of practice example for a comprehensive document solu- each sub-project, as well as ten decentralized service tion. It encompasses the national ID card and ePassports, sites - one of them located in every capital city of the ten the driver's license and the vehicle registration system. South Sudan States – for the enrollment of ID documents. The system architecture (including a disaster recovery The decentralized vehicle registration sites, connected to system for producing and accessing ID documents at the central site by VSAT, are equipped with high-security embassies abroad) and the design of the polycarbon- printers and number-plate presses for the registration, ate documents, which were determined by technical and renewal and production of the documents. ID cards and geographical requirements, were established in close ePassports, however, are personalized in the capital city. collaboration with the authorities at site. With regard to Driver's licenses are issued in a registration center in a complete know-how transfer, the local staff received Juba only, offering pre-registration and issuance of new comprehensive training during the course of the project to and renewed documents. For the verification of individuals, documents and vehicles, the traffic police have been equipped with ten mobile handheld devices.













Driver's License

ENROLLMENT (102) CENTRAL SITE **CENTRAL SITE** STATIONARY ENROLLMENT (30) **ENROLLMENT** CENTER (10) MOBILE ISSUANCE (42) ISSUANCE / MB DEOS MB DEOS CENTER MOBILE PERSONALIZATION SITE PERSONALIZATION (10)VERIFICATION SITE **ENROLLMENT** CENTER (13) ISSUANCE -ISSUANCE **FMBASSY** CENTER (3) **ENROLLMENT &** PERSONALIZATION PERSONALIZATION **BLANK DOCUMENTS** SITE Vehicle License PERSONALIZED DOCUMENTS

PERSONALIZATION SITES (10)

* * * * * * * * * * *

BLANK DOCUMENTS & MATERIALS

PERSONALIZED DOCUMENTS

Registration Card

Ownership Card

Tax Sticker

Number Plate

Windshield Sticker

Mobile Verification

Logbook

Passport Booklet

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BLANK DOCUMENTS

PERSONALIZED DOCUMENTS

Diplomatic Passport

Regular Passport

Special Passport

Business Passport

Official Passport

VERIFICATION

Documents
 Hardware
 Software

National ID Card

National Certificate

SWISS CONFEDERATION

MILITARY ID CARD

the identification of the card holder.

software structure was set up, including personalization requirements. management, data and document management, data Every site is equipped with personalization systems, thus agement components.

requested from the national registry and processed by mously and independently from the central site.

With the Swiss Military ID Card, Mühlbauer delivered a operators via webportal. The military recruits then percard with a variety of integrated services (for example form the additional biometric enrollment (face and sigtime recording and various access functions) apart from nature) themselves on the MB Self-Enrollment KIOSKS. This set of data is then combined with the demographic The scope of the project was the delivery of the complete dataset. The enrolled data is processed and transferred to solution for the enrollment of demographic and biometric a military server at the central site. Additionally, data can data and the pre-personalization and personalization of be enrolled via webportal for different user groups (for the high-secure military ID card. Moreover, the complete example external contractors) meeting the high-security

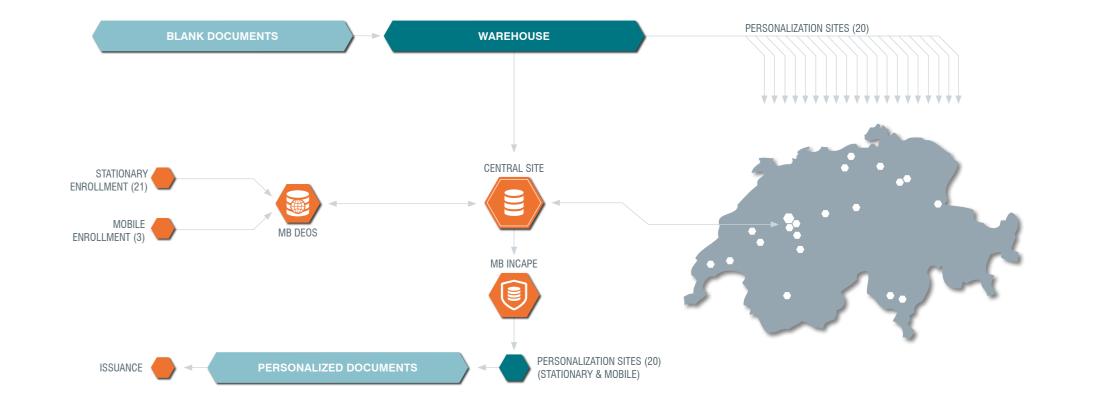
matching with the national registry, as well as user man-enabling the decentralized personalization and issuance of the military ID card at site, right after examination.

A special solution approach is the biometric enrollment Via webportal, the administrator orders blank documents, by means of MB Self-Enrollment KIOSKS: After receiv- which are equipped with state-of-the-art security features ing the conscription order, all recruits have to undergo from the central warehouse. Thus, the personalization and medical examination during which their personal data are issuance of the military ID card can be performed autono-









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Documents
 Hardware
 Software



UNITED ARAB EMIRATES

ID CARD, ePASSPORT

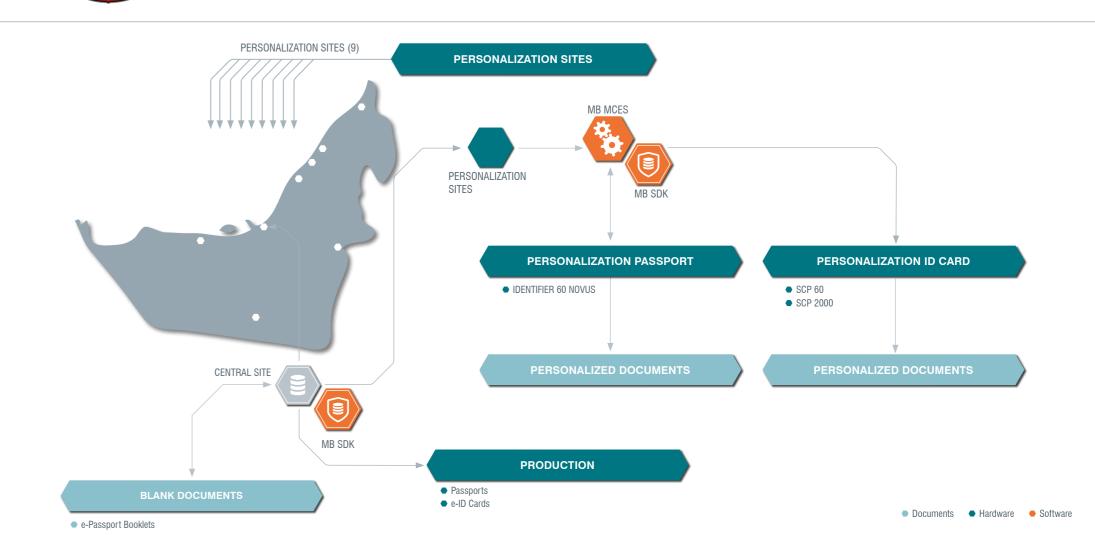
The Federal Authority for Identity, Citizenship, United begin producing the new Generation of National ID cards Printing and Publishing assigned Mühlbauer in February and passport booklets was also part of Mühlbauer's solu-2021 to propose a new generation of the UAE National tion. In addition, the team joined the project and provided ePassports issued at the national level. The delivery of all for the Best New National ID Card. equipment necessary for United Printing & Publishing to











SCP 60 SCP 2000 IDENTIFIER 60 NOVUS 74|75

PARTNERS



EXEMPLARY QUOTES

"We really appreciate Mühlbauer's work which met all of our high expectations in terms of quality and security of the complete national ID card project."

Colonel Henri Jacques Kienaka, Le Directeur de l'Identification Civile, Ministère de la Sécurité et de l'Ordre Public, Republic of the Congo; Project: ID Card Issuance Solution

"Mühlbauer's technology is fundamental for our citizens to have a reliable identity document."

Margarita Velado, President of Natural Persons National Registry (RNPN), Republic of El Salvador; Proiect: ID Card Issuance Solution

"We, Official Printing House of the People's Democratic Republic of Algeria, are delighted and very satisfied with the partnership with Mühlbauer ID services. All our assistance requests are met with the best deadlines. Our current collaboration is proof of our complete satisfaction."

Imprimerie Officielle Algeria; Project: Complete card factory, Driver's License, Vehicle Registration cards production "Mühlbauer turned out as very competent and flexible and we feel confident with choosing MB as a technology provider."

Brigader Majed Shanon, The Manager of Traffic Project, General Directorate of Traffic Police, Ministry of Interior, Republic of Iraq, Project: Driver's License and Vehicle Registration Card Personalization

"Mühlbauer's solid expertise and client-oriented approach were instrumental in the realization of this very successful project."

Giorgi Gabrielashvili, Head of the Civil Registry Agency of Ministry of Justice, Georgia, Project: elD Card Issuance Solution

"We are glad to have MB as a reliabe partner; the technology and services provided by MB have proven excellence."

D. Flavio Ramon Brocca, IT Head of the Civil Registry, Argentine Republic; Project: MB FastGate

"We are proud of the new ID and grateful for the excellent solution of the company Mühlbauer. Made in Bayaria – for Bayaria"

Mr. Joachim Hermann, Minister of the Interior, for Sport and Integration, Bavarian State Ministry; Project: New Bavarian Police ID Card "We feel very confident with the technology and services provided by Mühlbauer and are convinced that we made the right selection."

Brig. Gen. Augustino Maduot Parek, Director General of Nationality, Passport and Immigration, Ministry of Interior, Republic of South Sudan; Project: Identity Document Issuance

"We express our deep respect towards Mühlbauer for the reliable partnership."

Giorgi Tepnadze, Manager of the Head Office, Operative Technical Department, Ministry of Internal Affairs, Georgia, Project: MB FastGate

"Mühlbauer supported us in all matters in a flexible and client-oriented manner."

Carlos Lago Iglesias, Director de Imprenta, Real Casa de la Moneda, Spain, Project: elD Card Personalization

"With the experience of numerous, successfully realized ID projects in the past decades, Mühlbauer trustfully handled and implemented a customized solution for the personalization and issuance of ePassports which exceeded our expectations by far."

Mr. Yogesh Jitendra Karan; Acting Permanent Secretary for Foreign Affairs; Republic of Fiji; Project: ID Card Issuance Solution

"Mühlbauer has proved to be a reliable contractor and has given its full and perfect support."

Viktor Redcenco, Director of the Production Department, REGISTRU – State Information Resources Center CSIR. Republic of Moldova: Project: MB FastGate



"We feel to be in good hands with Mühlbauer."

Jacqueline Kwan, Assistant Director of Immigration, The Government of the Hong Kong Special Administrative Region, Project: ePassport Personalization

"Mühlbauer was in the position to manage this project in a highly professional way."

František Maleč, Technical Director, Státní Tiskárna Cenin, Czech Republic; Project: ePassport Personalization

"Every Kenyan gets a single identity, we call a single source of truth or in Kiswahili Huduma Namba"

Dr Fred Matiang'i, Interior Cabinet Secretary, Nairobi; Project: National elD Card

"MB's identification solution has contributed to a better security in citizen identification process."

Ing. Rodolfo Arriaga, Director Ejecutivo de RENAP; Proiect: National ID Card & Resident Card "We appreciate Mühlbauer as a reliable, solution-oriented, flexible and strong partner in our ePassport project during all stages of planning and implementation."

Slobodan Nedeljkovic, Assistant Minister, Head of Sektor, Ministry of Internal Affairs, Serbia; Project: ePassport

"We appreciate Mühlbauer as a reliable, solution-oriented, flexible and strong partner."

Issac leng Kit Lai, Director Identification Services Bureau, The Macau Special Administrative Region Government; Project: ePassport Issuance Solution

"We highly appreciate Mühlbauer's support in this project. We feel confident that our decision to select Mühlbauer was the right one."

Jamoliddin Ubaidulloev, Head of Consular Department of the Ministry of Foreign Affairs of Republic of Tajikistan; Project: ePassport

"We appreciate Mühlbauer's commitment, work and ongoing cooperation concerning the national ID and Passport and Border Control Project."

Dr. Zefanias Seneta Mabie Muhate, Permanent Secretary of the Ministry of Interior; Project: Document issuing solution and Border Management systems, ID Cards, Travel Documents & Electronic Visas, Driver's Licences

"We are very satisfied with the choice of our manufacturer. The cooperation with Mühlbauer is trusting and constructive."

Walter Valeri, Director Passport Production Center,
Department of Foreign Affairs and Trade in Australia, Project: Hardware
and Related Services for the Personalization of the Australian Passport

"Mühlbauer has provided excellent service and support for the recently completed biometric enrollment of approx. 5 million citizens in the very short time frame of 6 weeks."

A.M. Kirunda Kivejinja, 3rd Deputy Prime Minister / Minister of Internal Affairs, Republic of Uganda, Project: ID Card Issuance Solution

"This project will ensure every driver and vehicle is registered, bringing more certainty to Kurdistan Regeional Government's registries, public finances and safety."

His Excellency Mr. Masrour Barzani, The Prime Minster of Kurdistan Regional Government; Project: Driver's License and Vehicle Registration



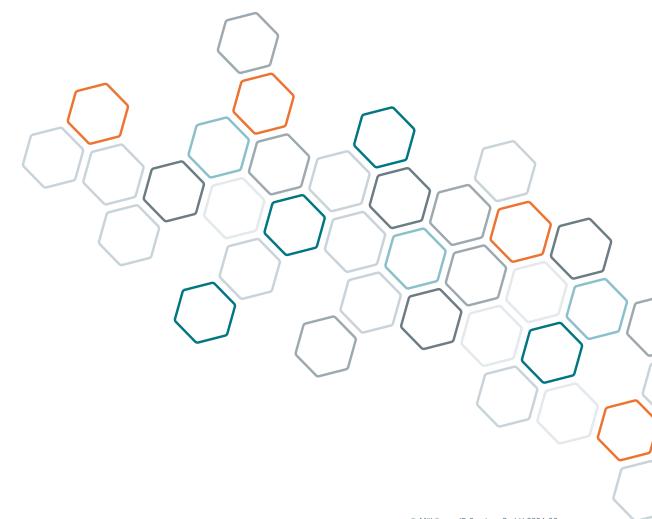
RELIABLE PROJECT PARTNER

WITH OUR VISION AND OUR INNOVATIVE SOLUTIONS WE HAVE EARNED THE CONFIDENCE OF GOVERNMENTS
AND PUBLIC AUTHORITIES WORLDWIDE AND WE CONVINCE THEM EVERY DAY ANEW.
WE ARE COMMITTED TO OUR CUSTOMER'S COMPLETE SATISFACTION AND SEE OURSELVES AS THEIR PARTNERS.
OUR MOST IMPORTANT VALUES - TRUST AND RELIABILITY - SERVE AS THE CENTRAL GUIDELINES FOR ALL OUR ACTIONS.











MÜHLBAUER ID SERVICES GMBH

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