

Best Solutions for Your Secure ID Documents



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Discover a Service Tailored to Your Needs

Issuing an electronic ID document is a complex process. It requires not only a well-matched system and synchronisation of hardware and software elements, including a secure featured card body, operating system and applications, but also a data generation system and personalisation solutions. Depending on the security level, additional PKI infrastructures, certificate management and automated fingerprint identification systems (AFIS) have to be installed together with a customized card management system (CMS). Our experts start by analyzing your specific situation and the requirements of your ID project. In partnership with you, we develop a service tailored to your needs. You know what you want; we know what you need and we know how to achieve it.



The Overall Package for Your ID Requirements

Consulting and project management

Years of experience in ID projects have taught us what our clients need. Our skilled project management team can guide you through the process of implementing your electronic ID document system – from the first steps of analyzing the requirements to the finish, when the brand new cards are launched and the standard issuing process starts. Austria Card's ID project experts will evaluate the systems and machines and provide professional advice regarding the required machinery. Each project has its special aspects. If more parties are involved, our detailed specifications of interfaces make sure all elements fit together smoothly. Personalisation is an important issue. Our project managers make sure you get the perfect personalisation solution for your electronic ID documents.

Smart card design

We understand your smart ID card as the representation of your organisation. It has to provide utmost security combined with an appealing design. Our security card designers skilfully include a well-balanced mix of security features in your card design which creates a unique and forgery-proof smart ID document.

Chip operating systems

The operating system is the heart of your smart ID document. At Austria Card, we know it is essential to have the right heart in place. Therefore, Austria Card offers native as well as open operating systems.

ACOS, Austria Card's native ACOS-ID system, is available for contact-based, contactless and Dual Interface solutions. ACOS forms a closed system and consequently offers extra security. Our in-house development team is flexible to your needs and provides customized applications and functionalities for your smart ID document. All open systems contained in the ACOS-ID range guarantee absolute independence. Standardized applications ensure international compatibility and leave ample space for all kinds of adaptations.

Applications

Our applications are designed to make life easier. National Security, Security on the Road or Social Security ... – whatever your purpose, we provide the applications you need, be it customized or standardized.

Smart card production

Austria Card's high quality production process stands the test with each one of the 70 million smart card products per year. Card materials have to be chosen carefully to sustain the stress of a life cycle on the one hand and provide a broad range of applicable design features on the other hand. We help you to choose the right card material for your purpose.

Smart Solutions Not Only for Smart Cards

Smart card personalisation including key management

We use electronic and optical personalisation to make every smart card personal. You can choose from a wide range of personalisation options. Whether you prefer embossing or engraving, thermotransfer printing or thermosublimation will depend on aesthetic, functional and security aspects. For whichever technology you opt, security is of utmost importance when handling personal data. At Austria Card, cardholder's personal information is processed under strictest security measures. Secure exchange of electronic keys guarantees the protection of cardholder data during the data transfer. Our HSM (Hardware Security Module) developed according latest security technology, encloses the data and prevents any unauthorised access.

Installation and support of personalisation systems

National law or other regulations may prohibit the transfer of personal data across national borders, so that in such projects sensitive data must be processed locally.

Austria Card enables the local personalisation centre to personalise electronic ID cards within its own national territory. Our team provides extensive know how in implementing your personalisation system. Depending on the project scope, this can include the development of a requirement specification, implementation, installation and support. Also card finishing – sorting, inspecting and mailing – can be applied.

Trusted Service Management for mobile ID applications

The use of a mobile phone as a means of identification is gaining acceptance and popularity. But also for mobile identification technologies security is essential. Austria Card's Trusted Service Management (TSM) increases protection by helping providers to securely distribute and manage contactless services for their customers.

Together We Can Build a Safer Future



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Austria Card – Your Partner in Security



The world has become smaller. People cross continents within a few hours. They leave their native country to take on a job thousands of kilometres away or sell their products in America as well as in India. Migration and mobility are important factors in modern society. As we can no longer rely on personal acquaintances, objective and reliable identification is essential.

Identification – Authentication – Integrity

Electronic ID documents provide the most effective means to verify a person's identity. But identification is not the only purpose of smart ID documents. The chip embedded in such documents and the applications behind it also enable the cardholder to log in at secure electronic portals (authentication) and to sign documents securely (integrity).

Secure systems – like smart ID systems – require reliable partners. Austria Card is a renowned supplier of smart documents. Our vast experience in the management of ID projects makes us your perfect partner in security.

Why secure and smart ID documents?

- Qualified identification (e.g. biometric features)
- Identity theft prevention
- Secure access (e.g. to eGovernment services of financial institutions)
- Increased comfort (e.g. easier and faster online identification)
- Rationalisation of standard processes (e.g. clearance, identification for purchases with age limits)
- Simplified administration (e.g. social programmes)
- Compliance with international standards

A Wide Range of Products to Meet Your Needs



Austria Card's ACOS-ID product range was developed to suit the requirements of all ID purposes. The elements and options of ACOS-ID are as manifold as its fields of application.

ACOS-ID products consist of a card body containing a chip with an operating system and one or more applications. Each part – card body, operating system and application – offers a variety of options to make sure your smart ID solution is tailored to your needs.

It is up to you to make your choice between PVC, polycarbonate or an alternative card material for the card body and combine it with a set of security features that emphasise the card design and help to prevent fraud.

If you prefer contact-based, contactless or Dual Interface smart ID cards, a native operating system or an open platform: ACOS-ID leaves nothing to be desired.

Fields of Application

| National Security | Security on the Road | National Defense Security | Social Security | Education Security |
|--|---|---|--|--|
| <ul style="list-style-type: none"> National Identity Card Residence Permit Refugee Card Immigration Card Seafarer's Card Voter Registration Card | <ul style="list-style-type: none"> Driving Licence DigitalTachograph Vehicle Registration Card | <ul style="list-style-type: none"> Military Identity Card Police Identification Weapon License | <ul style="list-style-type: none"> Social Insurance Card Health Card Health Professional Card Work Permit Retirement Card | <ul style="list-style-type: none"> Student ID Card School Card |

Trust Us to Tackle Your Security Threats

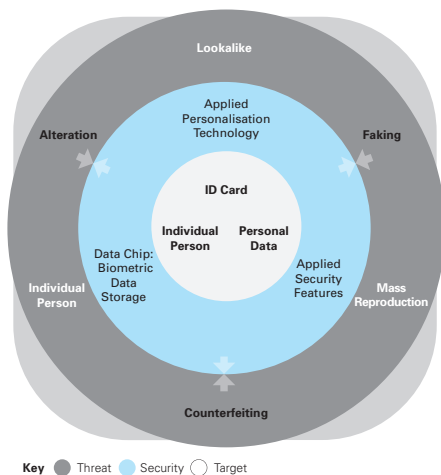


A crucial aspect for the design of secure ID documents is awareness of all forms of security threats. The aim of fraudulent manipulations can be the creation of false identities or access to funds or data. To reach this goal, different forms of manipulation are used, be it counterfeiting, faking, alteration or lookalike.

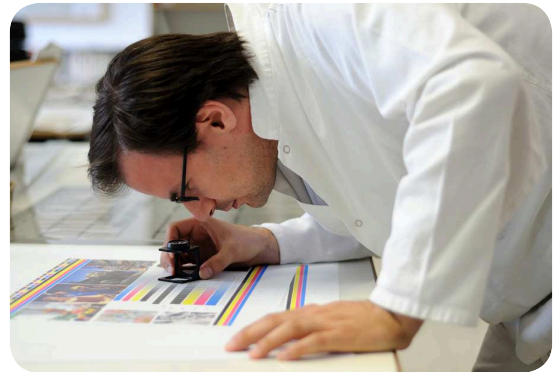
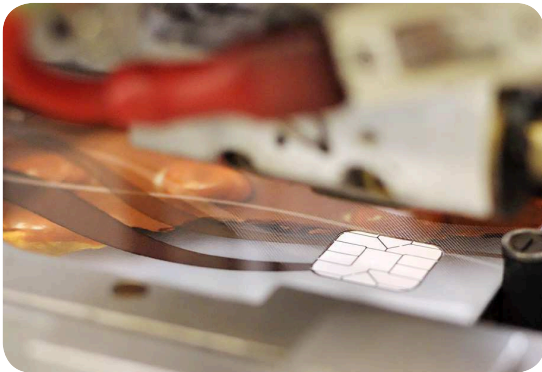
To protect smart ID cards against fraudulent use, Austria Card uses optical as well as logical security aspects. The combination of various security features increases security significantly.

Chips contained in Austria Card's smart ID cards are certified according to the highest security standards. Personalising smart ID cards also requires implementation of the highest security measures to guarantee the integrity of data. Austria Card's inhouse personalisation process is certified according to the strictest security standards.

Design of ID cards – fighting security threats



High Security Demands High Technology



At Austria Card, we have extensive experience in supplying a wide range of contact-based, contactless and Dual Interface cards. For more than 20 years, Austria Card has been developing software for smart cards in its inhouse Research and Development department. Experts in cryptography, security applications, operating system and software testing work together to design products complying with the highest technical standards.

We cooperate with governmental as well as enterprise and retail-based organisations. Many of our customers demand high levels of security – both for the production process as well as for the product itself. Austria Card's compliance with international standards shows that we meet those demands. But we even go further: periodical audits of production processes and product quality as well as a continuous innovation process make sure latest state of the art standards are met - and exceeded.

What makes our cards special?

- Consulting: Our experienced project management team guides you through your project
- Variety: Austria Card offers a broad range of security features even for polycarbonate cards
- Flexibility: We offer native as well as open operating systems
- Customization: Highest customization of card application through our experienced development team on native ACOS or JAVA based applets

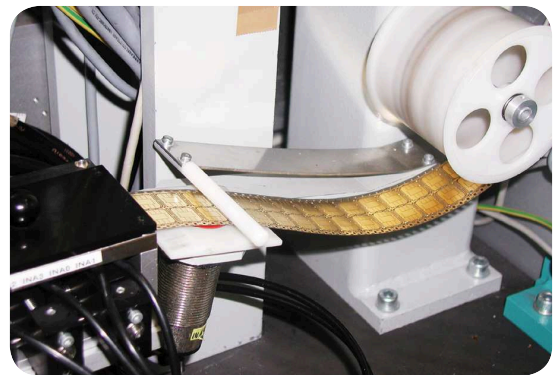
Meet Your Electronic Demands with ACOS-ID



Electronic identity documents have significantly gained importance. Machine-readable electronic passports facilitate automated processes and reduce queues at border control. Electronic ID cards containing additional applications can be used for online services as well as standard identification purposes.

In order for these documents to be read electronically, they need to be equipped with an embedded chip containing an operating system and applications. The operating system secures the correct operating of the chip hardware, whilst the application provides the functionality.

Our solution to electronic ID documents, ACOS-ID, has been sold more than 40 million times since its introduction. We were pioneers in developing e-ID for e-government across Europe, and ACOS was the solution used for Austrian electronic citizen cards right from the start.

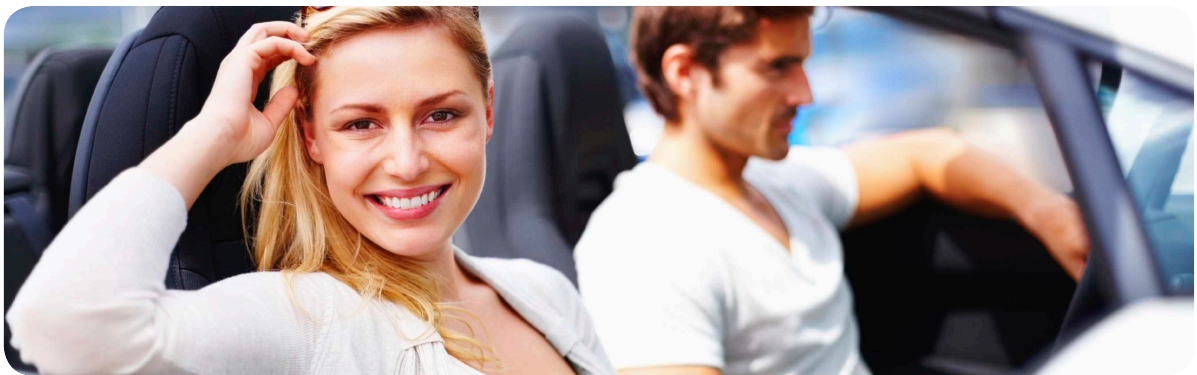


Complying with international standards

Our ID documents meet the security requirements of both the EU and the International Civil Aviation Organisation (ICAO), an NGO body under the United Nations that sets standards for travel documents.

An electronic ID card has sensitive data - typically a digital facial photo and two or more fingerprint images - stored on a contactless high security microchip inside the document.

On an ICAO and EU compliant ePassport, this information needs to be protected by different types of security layers. These include passive authentication (PA) to prove data integrity, basic access control (BAC) for data privacy, active authentication (AA) for copy protection and extended access control (EAC) as an advanced security mechanism to protect sensitive holder information, such as fingerprints. Our electronic citizen cards are approved for qualified electronic signature according to SSCD protection profile.



ACOS-ID products can be configured to use all of these features. For example, we can provide documents with basic access control or add EAC and other features as requested by customers.

An electronic solution whatever your needs

Our ACOS-ID is a bundle of applications that you can use for the whole range of ID cards. Moreover, our multi-application support lets you combine any of the following uses:

- ☐ National identity card
- ☐ Passport
- ☐ European citizen card for IAS, PKI and qualified electronic signature
- ☐ Residence permit card
- ☐ Driving licence
- ☐ Vehicle registration card
- ☐ Healthcare card
- ☐ Digital tachograph card

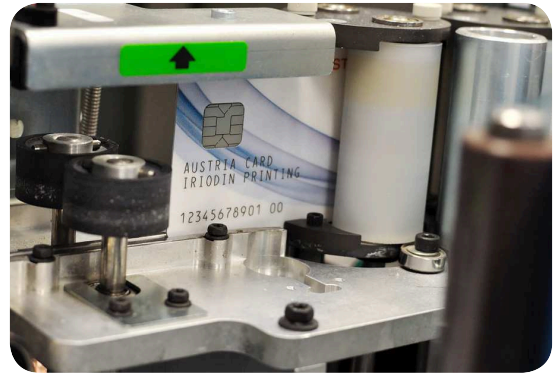
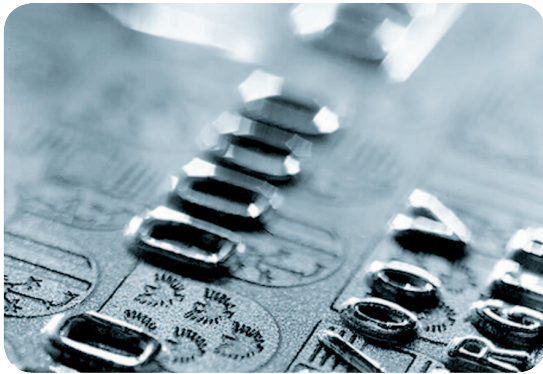
All ACOS-ID products are available as contact-based, contactless and Dual Interface solution.

Technology you can trust

We have implemented ACOS-ID by using different technologies and platforms. You can get all our applications as native implementation on ACOS platform as well as from several third party suppliers and as ROM-masked JAVA™ applets on state-of-the-art JAVA Card platform. We provide ACOS-ID on the most advanced chip platforms from various chip suppliers. Our chip hardware and our applications are certified according to Common Criteria to prove that they meet the highest level of security.

If you are looking for the flexibility to add customized functionality, our Java Card based solutions are second to none. They also mean you save EEPROM memory as all ACOS-ID functionality is available in ROM.

A Durable Card Demands Tough Materials



Identity cards, driving licences and many other ID documents have long validity periods. Daily use means they are exposed to heat and cold, they are bent and pressed. Therefore identity documents require stressable and hardwearing materials. Polycarbonate material offers the perfect solution for this purpose.

Polycarbonate material requires highest expertise for card production due to its hardwearing nature.

Austria Card has developed a broad range of design and functionality options even for polycarbonate cards. OVI, microtext or guilloches: You can choose your preferred features to design your particular polycarbonate ID card.

Contact or contactless – that's the option – or do you prefer Dual Interface? We provide not only standard contact-based ID cards made of polycarbonate but also contactless and Dual Interface cards.

The range of raw materials

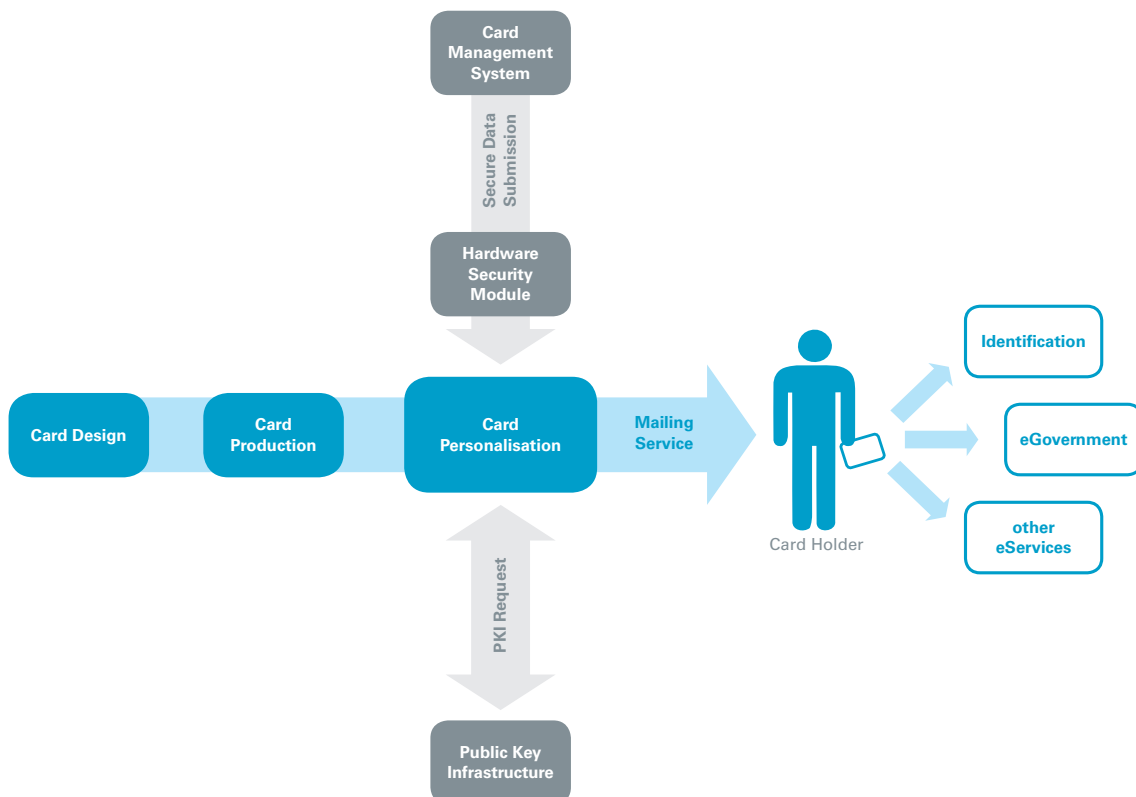
| | PVC | PVC/ABS Blend | Polycarbonate | Composite |
|----------------------|---|--|---|---|
| Field of Application | <ul style="list-style-type: none">• Loyalty• School card• Payment card | <ul style="list-style-type: none">• Identification cards designed for medium lifespan | <ul style="list-style-type: none">• All high secure identification cards, i.e. national identification, driving licence | <ul style="list-style-type: none">• Identification cards with medium to high lifespan |
| Characteristics | <ul style="list-style-type: none">• Wide processing range• Medium temperature stability• Cost-benefit ratio• Life Span up to 3 years | <ul style="list-style-type: none">• Wide temperature range• High impact strength• Cost-benefit ratio• Life Span up to 7 years | <ul style="list-style-type: none">• High temperature range & stability• High mechanical strength• Long life span up to 10 years• High secure laser engraving | <ul style="list-style-type: none">• High temperature range & stability• High mechanical strength• Long life span up to 10 years• High secure laser engraving |
| Temperature Range | -25° to +65°C | -40° to +85°C | -60° to +135°C | -40° to +100°C |
| Life Span | 3 years | 7 years | 10 years | 10 years |

Choose a Personalisation System to Suit Your Needs

Personalisation not only refers to the cardholder's name printed onto the card. Data has to be protected and processed, transferred and printed. Austria Card offers two options of personalisation systems: Inhouse personalisation means data is transferred to Austria Card via secure channels and processed in a high secure environment. Personalisation in compliance with Austria's strict data protection regulations and certified IT security according

MasterCard and VISA regulations ensure that Austria Card's inhouse personalisation offers utmost security. National law may prohibit the transfer of personal data across national borders, so that sensitive data has to be processed locally. For such cases, Austria Card provides the installation of our personalisation system and professional support. This enables the issuing organisation to personalise within its national territory.

Integrated Solutions



Choose the Right Security Features to Suit Your Needs



Secure ID documents are issued to provide particular functionalities, but they also communicate the image of your organisation. An elaborate security card design creates a positive image and at the same time increases the security level of your smart ID card.

Austria Card’s card design team is specialised in arranging data and security elements to an attractive design which is clear, secure and appealing. Our designers will make the best of your secure smart ID card.

Card body and personalisation security features

| Levels of Security Features | | | |
|--|-------|---|-------|
| Printed SF | Level | Personalised SF | Level |
| <ul style="list-style-type: none">GuillochesIris PrintMicrotextUV-Print (Fluorescent Inks)OVI™ (Optical Variable Ink)IR-Feature (IR Drop Out-f.)M-Feature (Upconverting f.)Latent Image (Anti Copying)Micro Tags | 1 | <ul style="list-style-type: none">Laser EngravingCLI/MLI (Individual Data)Hidden Image IPI™Laser Ink Engraving linked to holographic elementMRZ | 1–3 |
| | 1 | | 1 |
| | 2 | | 2 |
| | 2 | | 1 |
| | 1 | | 1–2 |
| | 2 | | |
| | 2 | | |
| | 1 | | |
| | 3-4 | | |
| | | | |
| Applied SF | Level | SF by Special Processing | Level |
| <ul style="list-style-type: none">HologramHolographic StripeKinegram™ & TKO™ | 1–3 | <ul style="list-style-type: none">Surface ReliefCLI/MLI – LenseTransparent BoarderCard Body Structure | 1–2 |
| | 1–2 | | 1 |
| | 1–3 | | 1 |
| | | | 3 |

- Level 1: No equipment required in order to verify authenticity.
- Level 2: Simple device required to verify authenticity.
- Level 3: Forensic equipment & specialist knowledge required to verify authenticity.
- Level 4: Authenticity only verifiable by manufacturer.



1

Guilloches

Guilloches are printed security lines – the layout of the intersections and geometry is unique. Copying is inhibited by the layout arrangement of fine lines, rainbow print and the exact colour calibration.

Level 1, printed



2

Rainbow Print (Iris Print)

The colours gradually change their shade from one colour to the next. Colour copies cannot reproduce this effect and counterfeiting can be detected very easily.

Level 1, printed



3

Microtext

Fineline or microprinting refers to very thin and small printed characters or entire words. Without the use of a magnifying lens the font appears as a continuous line. The characters contained in these lines cannot be reproduced with conventional copy methods.

Level 2, printed



4

Security Stripe

Metallised or partly demetallised holographic security stripes can be used as security threads up to a width of 2 mm, non-metallised Kinegram® stripes up to 4 mm. Both solutions can be arranged vertically or horizontally under the top layer of the card.

Level 1-2, applied



5

OVI®

Optical Variable ink is a security feature showing different colours as the angle of view changes. Using a dark background colour, the colour changing effect can be enhanced. OVI® is often used for covering the chip cavity on the reverse side of the card.

Level 1-2, printed



6

Fluorescent Print (UV Print)

Fluorescent ink is invisible under daylight. By viewing the card under UV light (A + B), design structures or texts become visible either in blue, red, green/yellow or blue. This "UV" printing element cannot be copied.

Level 2, printed



7

IR Up Converting Feature

A special pigment is mixed into a printing ink using a special process. Stimulated with invisible IR light (laser beam with certain range of wave length) the pigment reflects visible light in greenish/blueish shades.

Level 2, printed



8

MRZ – Machine Readable Zone

The machine readable zone makes the card ICAO compliant. With the right reading device and piece of software the personalised information can be read automatically.

Level 1-2, personalised

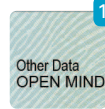


9

Positive/Negative Embossing (Surface Relief)

Using sophisticated structured lamination plates, the cards can be finished with a raised and deepened structure to produce the so called "positive/negative" embossing. This structure can consist of Guilloches, Microtext, logos etc. Also latent images are possible.

Level 1-2, special processing



10

Laser Engraving

High secure laser engraving makes the identification document practically "impossible to forge". It is possible to laser engrave any kind of personalised information – i.e. text, photos and signatures. The personalised information additionally can be protected by laser engraving through an holographic element like a Kinegram®.

Level 1-3, personalised



11

CLI / MLI

The CLI/ MLI uses an area of very fine lenticular lenses. In a highly specialised process, the lenses are integrated into the transparent overlay of the card body. Up to three images can be integrated into these areas by using laser technology. These images appear and disappear while tilting the card vertically for a CLI or horizontally for an MLI.

Level 1, special processing

Our ID Documents are Trusted Around the World



Meeting International Standards

In a more and more specialised world it is difficult to evaluate the characteristics of a high tech product objectively. Imprecise designations create a jungle in which the customer gets lost easily. International standards help to find the way. Standards specify product features and enable providers to make their products compatible with other components designed according to the same specification.

ACOS-ID products not only fulfil the requirements of EU regulations but also comply with international standards of organisations like ICAO, ISO and DIN. Our secure production process is certified by MasterCard and VISA, making sure the latest and highest security measures as well as quality standards are implemented.



Austria Card's Certifications:

- Information security management system complying with the requirements and standard of ISO/IEC 27001:2005
- Quality management system complying with the requirements of standard EN ISO 9001:2008
- Environmental management system complying with the requirements of standard EN ISO 14001:2008



We are Close to You

AMMAN

Fadi Nashashibi
Amman, Jordan
c/o Austria Card
Lamezanstrasse 4-8
1230 Vienna
Austria
M: +96 2796 188 911
e-mail: fadi.nashashibi@austriacard.at

BUCHAREST

Austria Card S.R.L.
Soseaua Odai, no 347-363
Sector 1
013604 Bucharest
Romania
T: +40 21 408 4500
F: +40 21 408 4600
e-mail: info@austriacard.ro

KRAKOW

Austria Card Polska Sp.z.o.o.
Węgrzce Wielkie 448
32-002 Węgrzce Wielkie
Poland
T: +48 12 299 66 60
F: +48 12 299 66 70
e-mail: biuro@austriacard.pl

ATHENS

Inform P. Lykos S.A.
5th klm Varis-Koropiou Avenue
194 00 Koropi, Athens
Greece
T: +30 21 06 69 78 00
F: +30 21 06 62 95 36
e-mail: sales@lykos.gr

BUCHAREST

Inform Lykos S.A.
Soseaua Odai, no 347-363
Sector 1
013604 Bucharest
Romania
T: +40 21 408 4500
F: +40 21 408 4600
e-mail: sales@lykos.ro

TIRANA

Albanian Digital Printing Solutions & Services
Autostrada Tirane-Durres
KM 5, Kashar
1051 Tirana, Albania
T: +355 4 4104 802
F: +355 4 4104 808
e-mail: info@adps.al

BAKU

Parviz Bagmanli
AZ 1069, T. Aliyev 112
Baku
Azerbaijan
T: +994 12 493 82 31
M: +994 50 21 28 727
F: +994 12 493 82 79
e-mail: parviz.bagmanli@austriacardtr.com

FRANKFURT/MUNICH

GNC CardServices GmbH
Odenwaldstrasse 19
63263 Neu-Isenburg
Germany
T: +49 61 02 816 800
F: +49 61 02 81 68 015
e-mail: n.jaeger@gnc-cardservices.de

VIENNA

Austria Card-
Plastikkarten und Ausweissysteme GmbH
Lamezanstrasse 4-8
1230 Vienna, Austria
T: +43 1 610 65
F: +43 1 610 65-701
e-mail: sales@austriacard.at

BELGRADE

Zvonko Sunjic
Predstavništvo Trasol E.U.
Dunavski Kej 9
11000 Belgrade, Serbia
T: +43 1 798 25 42
M: +43 699 123 752 75
F: +43 1 615 28 48
e-mail: zvonko.sunjic@utanet.at

ISTANBUL

Austria Card Akilli Kart Cözümleri
Fener Kalamis Cad.5
Belvü Sit. A/2-11
34726 Fenerbahce-Istanbul, Turkey
T: +90 216 330 51 59
M: +90 533 572 57 45
F: +90 216 330 51 93
e-mail: dileks@austriacardtr.com

ZAGREB

Robert Kajic
Vjekoslava Kaleba 3
10 000 Zagreb
Croatia
T: +385 98 35 45 12
F: +385 13 70 39 02
e-mail: robert.kajic@austriacard.at