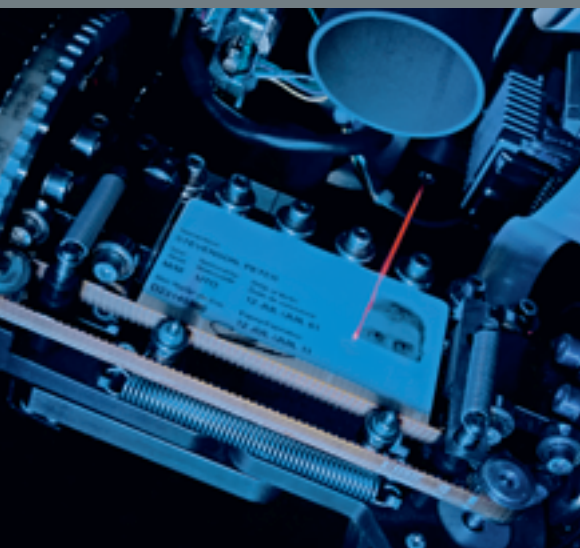# Smart solutions for challenging tasks

AZ alpha

Card Personalization System

Atlantic Zeiser's AZ-alpha sets new standards in the card market. The high-speed personalization system offers record breaking throughput and great flexibility with full process integrity. At the same time, the cost per card are minimized.

A new definition of speed

In smart card processing, the throughput of any personalization system is significantly reduced by the time consuming chip encoding and laser marking processes. The AZ-alpha offers the solution! Unique 3D-logistics and sophisticated distribution algorithms make optimal use of all personalization stations to achieve a cycle speed of up to 7,000 cards per hour.

The AZ-alpha can process a vast range of cards including telecommunication, ID, bank, Pay-TV, gift and loyalty cards. Freely configurable personalization modules empower the AZ-alpha to process virtually any application.

But time saving does not stop after the card personalization is completed. The sorting module eliminates additional production steps by automatically stacking the finished cards into different magazines. Sorting schemes are freely definable, for instance by company branch, or optimized for further processing. Reject bins prevent the system from stopping if a defective card is detected.

Integrity at its best

Offering the highest possible level of integrity, the AZ-alpha has gained the trust of governments, banks, service bureaus and other card issuers around the world. Several quality and security checks are carried out within the system.

Cards with malfunctioning chips are detected before the personalization and diverted automatically. Instant reproduction and strict card sequence monitoring ensure that the correct order is definitely maintained.

The AZ-alpha can integrate modules for visual card inspection. On the one hand, verification by the camera system can be carried out prior to the personalization to check that the correct blank card was loaded. Also the card layout can be measured. Minor print offsets and rotations can be compensated in the optical personalization modules. On the other hand, the camera can be integrated after the personalization to perform a final check of visible elements. It is possible to inspect the front and back of a card simultaneously.

Every single card movement within the AZ-alpha is tracked and the processing status is recorded. The resulting data sets form the basis for detailed reporting.
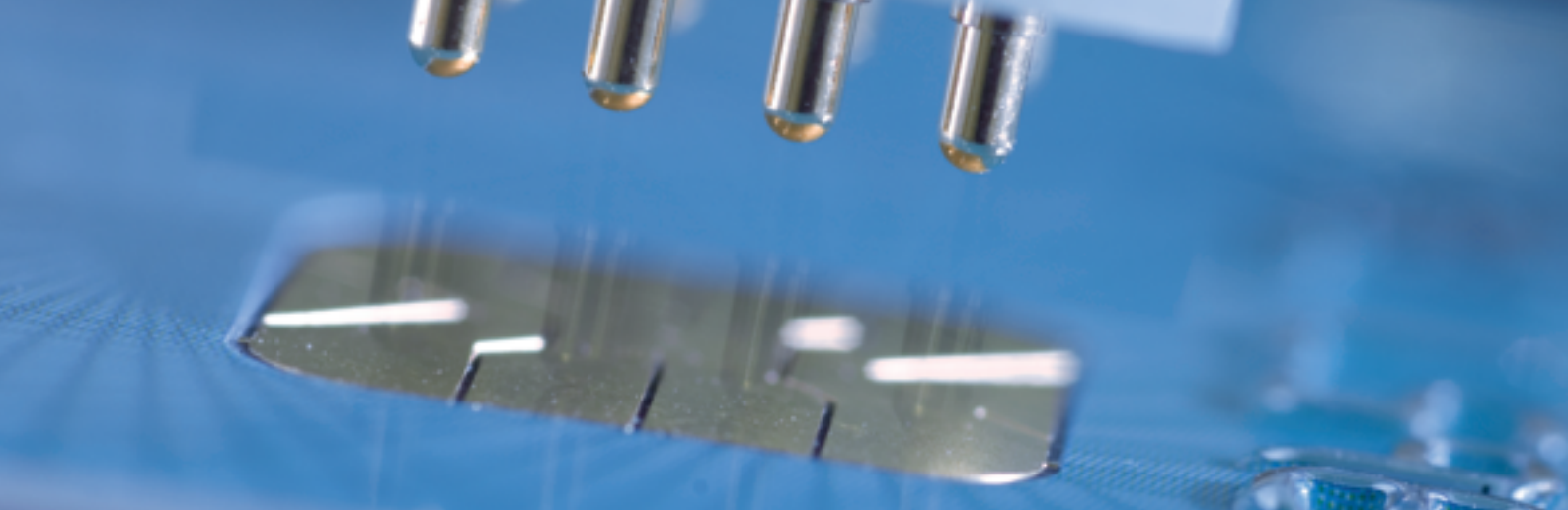
Intelligent solutions for minimal cost per card

With its smart two-track production concept in combination with great operator friendliness and low operating costs, the AZ-alpha minimizes the cost per card.

The AZ-alpha actually consists of two systems in one as cards are personalized in two parallel tracks. Both tracks can be used together for one application or even separately for multi-job processing. For instance, if one track is used for the main production, the other one can process smaller jobs at the same time. In the output sorter, each batch is stacked into the assigned magazine.

The two-track production concept also minimizes system stops. For instance a change of consumables in one of the tracks does not slow down the other track. Even during certain service interventions the machine does not need to stop. Therefore, costs and space for a separate back-up system can be saved.

With its compact footprint, its high magazine capacities for long operation intervals and its intuitive software interface the AZ-alpha is easy to operate and delivers a high net throughput while minimizing costs.

Going one step further: centralized card management with AZ-production

The AZ-alpha can be integrated into and controlled by AZ-production. The production management platform makes it possible to manage all processes related to card manufacturing and fulfillment including work preparation, order administration, production management, tracking, reporting and stock management with one single tool. Global security functions like internal and external communication encryption, user rights management and access control guarantee data confidentiality and security.

Of course the AZ-alpha can also be integrated into other software environments.
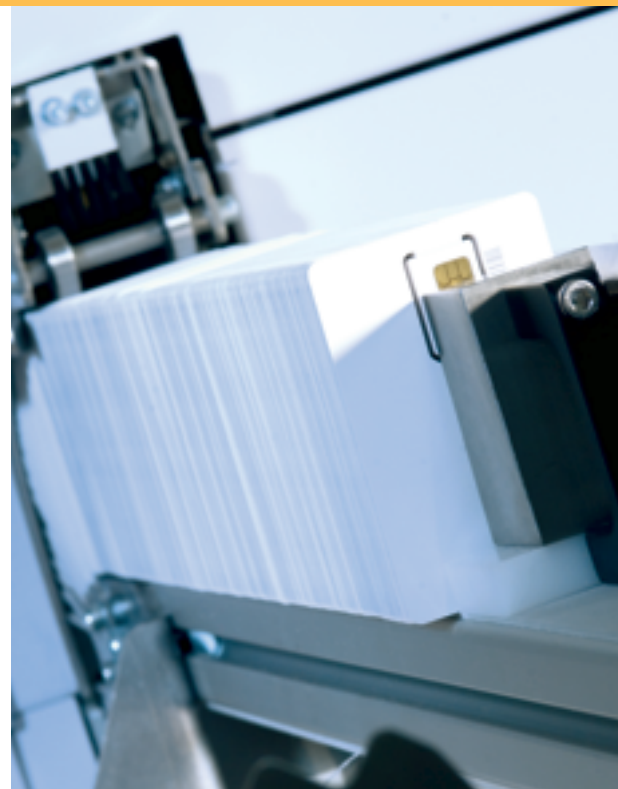
Focus on investment protection

The AZ-alpha was designed according to the Atlantic Zeiser module philosophy. All modules are separate functional units which can be joined together in flexible configurations to process a broad variety of applications. Whenever necessary, updates or retrofits can be integrated by simple plug-and-play.

Even the modules themselves can be upgraded. For instance chip modules can be equipped stepwise with packages of 5 encoding stations up to a maximum of 80 stations per system.

This makes it possible for the AZ-alpha to grow and adapt to your requirements – today and in the future.

# AZ-alpha modules: Flexible solutions for all applications

Card feeding

Both card feeding modules have two parallel feeders with a capacity of up to 800 and up to 3,000 cards respectively. The high feeding capacity permits long operation intervals.
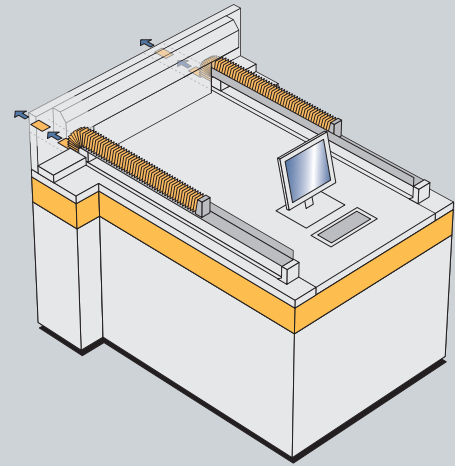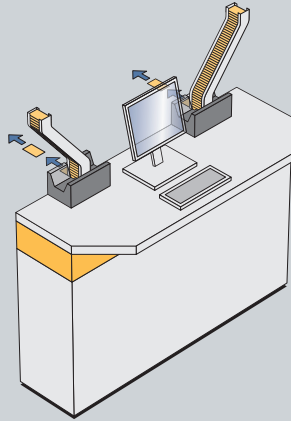
Electric personalization

Chips are personalized in parallel using up to 80 stations for contact and up to 48 stations for contact-less chip encoding. Even chips with high data volumes can be processed at maximum speed. Chip modules are freely scalable and can be upgraded with packages of five contact or three contactless chip encoding stations by simple plug-and-play. Mixed configurations of contact and contactless stations are possible.
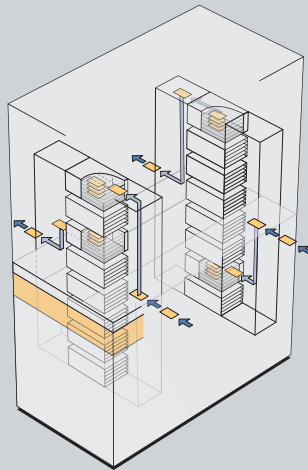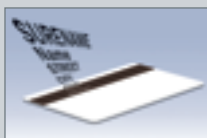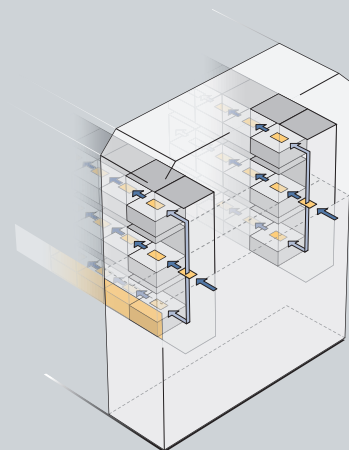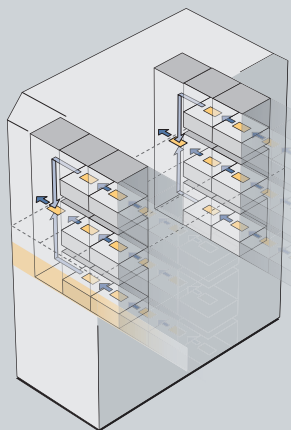
Contact chip

Contactless chip

Magstripe encoding and printing

Double and triple universal modules can be configured to realize magstripe encoding (HiCo/LoCo), printing, and protective overlay application on one or two sides of the card. Both thermal transfer and dye-sublimation printing with a resolution of 300 dpi are available. The cards are processed in six parallel stations to maximize the throughput.

Magstripe   Contactless chip   Monochrome print   Color print   Overlay   Turn-over
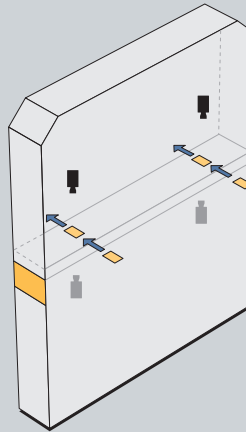
Visual inspection

A visual inspection camera can serve several purposes:

- Verify that the correct blank card was loaded and that the feeding direction is correct.
- Measure the card layout to detect print offsets and rotations. Accepted inaccuracies can be compensated in the optical personalization modules.
- Check visible elements like true type fonts, barcodes, 2D-codes, logos, photos, fingerprints and signatures.

Simultaneous inspection of the front and back of a card possible.

Visual inspection

Laser marking

Two different laser systems can be integrated: The economic fiber-laser system is ideal for GSM cards, while ID cards with grayscale photos, fingerprints and signatures are best done with the diode-pumped laser system.
The latter can also apply special security elements like swivel pictures (MLI & CLI).
Both sides of the card can be personalized.
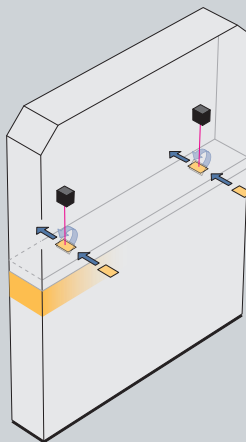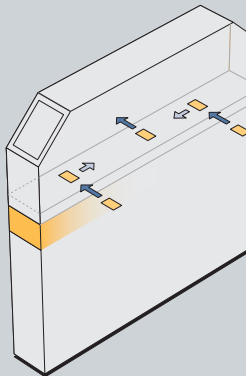

Diode-pumped laser

MLI & CLI


Fiber laser

Merging

The high-speed distribution module unites the two production tracks and leads the cards into the sorter module.

Stacking, sorting and diverting

The finished cards are stacked into up to 12 magazines. The sorting scheme is freely definable, for instance by company branch or optimized for further processing.
At least one of the magazines is predefined as reject bin.

AZ alpha
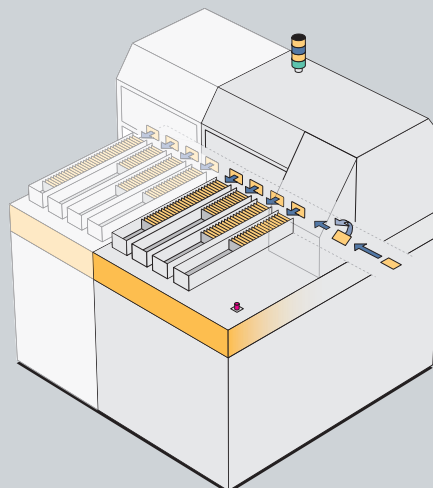
Card Personalization System

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Technical Data

System facts	
Cycle speed	up to 7,000 cph
Card types	ISO / IEC 7810 ID-1

Card feeding	
Number of feeders	2
Feeder capacity	400 or 1,500 cards each

Contact chip encoding	
Number of encoding stations	up to 80 (40 per track)
Protocols	T=0 / T=1, others on demand

Contactless chip encoding	
Number of encoding stations	up to 48 (24 per track)
Protocols	ISO 14443 A / B, Mifare

Magstripe encoding	
Coercivity	HiCo, LoCo
MM (Modulated Feature)	yes

Printing	
Method	dye-sublimation, thermal transfer
Elements	photos, fingerprints, signatures, logos, other graphics, true type and OCR fonts, barcodes, 2D-codes
Resolution	300 dpi
Two-sided printing	in successive modules

Laser marking	
Number of lasers	up to 6
Inscription types	vector / raster scan, tactile / non-tactile
Elements	photos, fingerprints, signatures, logos, other graphics, true type and OCR fonts, micro printing, barcodes, 2D-codes
Print-offset compensation	in combination with visual inspection
Swivel picture	MLI, CLI
Resolution	300 – 1,000 dpi
Two-sided marking	in one or two successive modules

Visual inspection	
Layout check	verification of card body and orientation, detection of print offset & rotation
Identification of optical elements	photos, fingerprints, signatures, logos, true type fonts, barcodes, 2D-codes
Two-sided inspection	front and back of card simultaneously

Stacking, sorting and diverting	
Number of magazines	up to 12
Magazine capacity	up to 500 cards each