

# Manipulation: simply handling?

If you look at the word's origin, "manipulation" from manus, Latin for hand, means nothing more than handling. Indeed, the shape of our hands, their duality and many uses have made our brains function as they do today. In his artistic works, Raoul Krischanitz consequently focuses on the irritation caused by manipulation of the reality portrayed. Irritation attracts attention. Also to his questions: "How do we perceive reality?" "How is reality created?"

Austria Card's printers manipulate top quality materials. The results produced by them are not only important in haptic terms: customers also benefit from state-of-the-art processing, the security standards of the future, and microtechnology preventing improper manipulation.

Try manipulating [cassandra.zwerina@austriacard.at](mailto:cassandra.zwerina@austriacard.at) – it is possible. At least as long as one of the few copies of Raoul Krischanitz's picture is still available. Send her an e-mail with "Landscape III" in the subject line. Or fax your request for a picture to + 43 (1) 61065-650. You'll

soon see that manipulation can prove fruitful. With a little luck, a copy of the award-winning artist's exciting photo-montage will soon be yours.



**Raoul Krischanitz**

## Biography

- 1974** Born in Vienna
- 1996 to 2002** Studied at Vienna's Academy of Fine Arts under Prof. Gunter Damisch – painting and graphics
- 1997** Illustrators Exhibition, Rio de Janeiro
- 1997/98** Children's book illustrators, Bologna, Tokyo, Taiwan
- 2001 to 2007** Several exhibitions in Austria
- 2003, 2005** Bratislava Illustration Biennial
- 2006** Month of photography, Krakow, Sampling 05, Bielsko Biala; photographic painting, Düsseldorf
- 1999 to 2005** Illustration for many children's books



## editorial

Dear Reader,

you hold the second edition of CardVisions in 2007 in your hands and we have good news for you. Austria Card passed the MasterCard audit with flying colours and we are certified for another year.

This issue's also deals with contactless cashless payment transactions. Dr. Martin Manninger, who is head of our research and development department and wrote this article for CardVisions, will give you the rundown on the current state of affairs and the outlook for the future.

Don't forget to take a look at our latest art promotion. Only 20 people can win a picture, so you'll have to register quickly.

We all hope you enjoy reading the new issue of CardVisions.

DI Friedrich Ramberger  
CEO

Mag. Gerhard Starsich  
CEO

## Successfully certified by MasterCard

Austria Card has again been audited by MasterCard International for 2007. We are proud to inform our customers that we proved to be a model company and have been certified for the production and personalisation of MasterCards for another year.

Every year representatives from MasterCard International and VISA International come to all the companies producing credit cards to ensure that quality and security conform to their high standards. In February it was Austria Card's turn again, and MasterCard International satisfied itself of the outstanding conditions and the excellent standards at the Central Bank subsidiary in Vienna.

CEO Gerhard Starsich is naturally delighted, but never doubted for a minute that we would receive certification: "Austria Card is an internationally renowned and respected company. Our customers know that security and quality are top priority

for us. And because we set ourselves such high standards, we are always at the forefront in these areas."

### Security chief delighted

Stefan Terenyi, head of the security department: "We're always a bit on edge before an audit, but basically we know that we work perfectly well and have a very high level of security. Which is why we gained certification from MasterCard International again this year."

Still, Austria Card is already getting prepared for the next challenging audit in May, when VISA International will take a look at our quality and security standards.

## Contactless innovation

In the payment transaction sector, contactless smart cards are the latest major innovation following implementation of the EMV standard. Contactless technology has been pushed by the two largest credit card organisations MasterCard and VISA since 2005, although the benefits of this subgroup of chip card technology have been acknowledged for over 15 years.

*A report by Dr. Martin Manninger, head of research & development*



### CONTACTLESS TECHNOLOGY THE BENEFITS

- Card holders keep their cards in their hands and consider this system to be simple, convenient and trustworthy. It certainly eliminates one problem that many customers encounter with the contact smart cards commonly used today: if they insert their cards in the terminal the wrong way round, they then have to repeat the procedure.
- Contactless transactions are completed in next to no time. Even with the most basic configuration, the data transmission rate is higher than for a standard contact payment. Their key feature is however easier and therefore faster handing for customers.
- Devices that only communicate without card contact are much cheaper to maintain, as they do not have any moving parts and also do not require an opening for inserting the card where dust and foreign bodies could penetrate.

When all the devices, especially also the ATMs, have been converted to contactless technology, the means of payment will no longer have to be in the form of a (plastic) card. In some countries key fobs and other designs have already been tested. However, if the need arises there is no longer the option of physically removing the means of payment from its user and it has to be deactivated electronically instead. During the transition period, the

alternative designs are only suitable as second cards, and the primary cards should technically be dual interface to communicate as both contact and contactless smart cards.

In the financial payment card industry, of the standards available, ISO 14443 has been widely adopted, which allows a typical range of 8 cm or less, depending on the card and terminal design. It is important for the range not to be too wide, as deliberately holding the card up to the terminal constitutes the intent to start a transaction. Data is transferred between the active terminals and passive cards by inductive coupling in the electromagnetic near field, the strength of which decreases proportionally to the cube of the distance. Before card holders can start unintentional transactions from a greater distance, the terminal's data transmission rate therefore has to be disproportionately high.

Special hardware that the card holder can use to temporarily deactivate the card has proved particularly suitable as additional security. The most practical solutions today are metal covers that shield the card from the electromagnetic field.

MasterCard has developed a functional specification based on ISO 14443 called PayPass that defines the transaction processes at the application level. VISA has VISA Wave, an adaptation of this specification for its products, but only to an extent that does not affect interoperability. The specification allows two types of transactions.

#### PayPass Mag Stripe

The chip contains the same data as is also stored on the magnetic stripe, however the card validation code (CVC) is calculated dynamically unlike with the magnetic stripe. This option should only be used for online transactions. MasterCard Europe

has also indicated that they do not intend to use this transaction type at all in Europe.

#### PayPass EMV

The chip carries out an EMV transaction, which also gives you the option of checking the card's authenticity offline using combined data authentication (CDA), i.e. an efficient variant of dynamic data authentication (DDA). This transaction type is therefore acceptable for online and offline transactions. EMV's risk management mechanisms (e.g. counters, limits, currency conversion) are available on the card and can be parameterized. The card could theoretically check the PIN offline, but it is not however very practical and is therefore expressly excluded.

The option of online PIN verification will be provided for both transaction types. VISA requires all cards to handle at least a basic EMV transaction, while MasterCard also allows PayPass Mag Stripe only cards. Both companies permit terminals that can only handle PayPass Mag Stripe transactions.



## ACE 2000 Dual Interface

Austria Card has developed a product called ACE 2000 Dual Interface that offers the full functionality of PayPass EMV, including combined data authentication, and therefore currently has the highest security level. In addition, this product is not only a means of payment but can also incorporate any number of other functions, such as customer loyalty card, digital signature and a second EMV function that is often used for authenticating users of internet services.

The variant for MasterCard is now ready, while the one for VISA has been delayed because of a change in specifications by VISA.



### Future prospects

In conclusion, let us take a look at the more distant future. Once the technology is more advanced, all cards will be contactless and incorporate both displays for showing the transaction amount and sensors for authenticating the user by means of PIN, fingerprint or some other process.

The user interface will therefore shift from the terminal to the technologically highly secure medium of a chip card kept by the holders themselves. This increases the security level in that the terminal no longer receives any authentication data from the

card holder. There is therefore a clear distinction: card holders authenticate themselves to the card, and then the card authenticates itself to the system.

[www.austriacard.at](http://www.austriacard.at)

## about Austria Card | Forecast for the future

### Will we no longer have to take our cards out of our purses or wallets to pay or withdraw money?

In the near future, we will be able to leave the card in our purses or wallets as long as they do not contain any objects that could affect communication. As soon as we have more than one contactless card in our purses or wallets, whether a correct transaction is carried out or not will depend on the terminal's capability of communicating with the customer.

Why? If a customer has three different cards, the terminal would have to establish a dialog to communicate with the customer and find out which card he wants to use for the payment. With the terminals currently available, however

the card still has to be held right up to the reader.

### What amounts can be paid with the card?

The institutions issuing the cards generally intend them to be used for smaller amounts, such as for paying at toll-booths or in fast food outlets. It is therefore up to the bank to decide for what amounts the card is to be activated.

### Has there been any experience with these products to date?

A distinction has to be made between the two variants currently available (see technical article), but basically both are already in use. PayPass Mag Stripe and



**Dr. Mikhail Gordeev**

Forschung und Entwicklung

VISA MSD are primarily used in the United States with the EMV-based version of PayPass and VISA Wave in Asia. In Europe, the EMV-based version will most likely be rolled out gradually over the next few years. However, contactless readers still have to be added to the terminals.



**“Landscape III” –  
the parting of the ways**

Everyone creates their own reality. Raoul Krischanitz’s landscape unmistakably shows what we constantly have to do: make decisions. The opposite of parting. If parting is painful, then decisions must be uplifting. Can we strive to go up? Is the path to the valley where security awaits us really blocked? Is rusting, old ballast preventing our hope of being carried home from being fulfilled?

Hardly a technique can answer these questions as clearly as photomontage. A far cry from the old belief that photos mirror reality, Raoul Krischanitz reminds us that no news media only shows unadulterated images nowadays. The shutter opens for a hundredth of a second but the work in Photoshop may take several hours.

Who is manipulating here? The definition of a lie implies the intent to deceive and the message’s capacity to deceive the recipient. Accordingly, Landscape III is also a powerful – and in its moribundity beautiful – piece of pure reality.

## COMPETITION

**Win one of 20 Pictures!**

Fax to: +43 1 610 65-650

or register under [www.austriacard.at/lottery](http://www.austriacard.at/lottery)

**Company**

**Name**

**Address**

**Telephone**

**E-Mail**

The competition is open to all readers of this newsletter with the exception of Austria Card employees. The promoter’s decision is final. By entering this competition you allow your data to be electronically saved at Austria Card. We do not pass this data onto third parties. The winner will be informed by us. Further correspondence regarding the competition cannot be entered into.

## society



On International Women's Day, the Works Council welcomed our female employees with a flower and gave the men a piece of chocolate as a consolation (photo left). It was an employee with STUZZA (study company for cooperation in payment transactions) who had the idea of staging an Austria Card tombola (photo centre) at the LOK Charity Ball. Here Cassandra Zwerina of Austria Card hands over the 5,000 euro card to Dr. Brandt. Also present was the initiator of the campaign Prof. Anton Zeilinger (photo right).



## Austria Card sponsors Laudimaxima

Vienna University has been awarding the Laudimaxima research prize for natural science and mathematics since 2005. The prize is a 5,000 euro cheque that aims to encourage young women to venture into these fields of study. Its patron on the university side is experimental physicist and Austria Card testimonial Prof. Anton Zeilinger, who also initiated cooperation with Austria Card.

A panel of experts selects the winners of the grant from all the entries. What they look for in particular is a special contribution to science in the relevant field. This year Austria Card presented the cheque – in our case naturally in the form of a card – to mathematician Dr. Hannelore Brandt.

After leaving school, Dr. Brandt started studying mathematics at Vienna University. She also worked part time as a research assistant for the International Institute of Applied Systems Analysis (IIASA) in Laxenburg. Having gained her first degree, she went on to join the postgraduate programme at the Faculty of Mathematics. Her thesis on evolutionary game theory exploring questions of the origin and stability of cooperative and social behaviour was also published in the renowned journal PNAS. Since then Dr. Brandt has been examining the credit services sector, such as the application of the game theory in a financial context.

## events

### Highlights Q2 2007

#### April

19.04.2007

#### EUROSMART

General Assembly in Brussels

[www.eurosmart.com](http://www.eurosmart.com)

#### May

05.05.2007

#### Cardist

Istanbul, Turkey

Cardist Card Technologies Exhibition in Istanbul is being held for the first time this year. Attracting manufacturers from all over the world, it will present new products for the bank, ID and telecom industries. Austria Card's subsidiary in Turkey has a stand and our employees Ünal Heper and Dilek Sagiroglu look forward to welcoming you.

[www.cardist.com.tr/en](http://www.cardist.com.tr/en)

#### June/July

09. - 10.06.2007

#### Technobank

Belgrade, Serbia

Now in its seventh year, Technobank in Belgrade has become the leading trade fair for card manufacturers in Serbia and Montenegro. Austria Card, the market leader in Serbia, also has a stand and will be showcasing new success stories for customers. Why not come and discuss how you can implement EMV projects professionally and successfully. Zvonko Sunjic, Georg Prüfert and Max Paul look forward to advising you.

[www.asit.org.yu/technobank/sr\\_index.html](http://www.asit.org.yu/technobank/sr_index.html)

28. - 30.07.2007

#### Cardforum SBK

Czech Republic

Czech bank card association SBK is holding its traditional meeting at Hotel Měřín in the resort of Slapy. Austria Card will again be presenting a paper at the event.

[www.cardforum.cz](http://www.cardforum.cz)

#### Masthead:

Publisher: Austria Card GmbH, A-1230 Vienna, Lamezanstraße 4-8, Phone: +43 1 610 65-0, Fax: +43 1 610 65-700, E-Mail: [sales@austriacard.at](mailto:sales@austriacard.at), [www.austriacard.at](http://www.austriacard.at)  
Editorial staff: DI Maximilian Paul, Mag. Michael König; Concept & Design: eitzenberger und partner, A-7000 Eisenstadt, [www.eitzenberger.at](http://www.eitzenberger.at); Pictures: Austria Card