

EMV Products and Services

Pushing payment to the next level



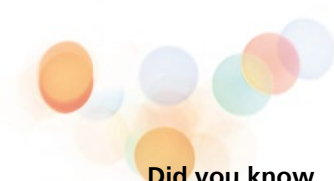
Moving to higher security levels with EMV cards

Right now there are more cards than people on this planet. This means that cards play an integral part in everybody's daily life, as do payment cards. Consumers use cards to pay for 40% of all expenditures incurred worldwide. One of the negative implications is that criminals

have also discovered cards and now cards are even more in the focus of fraudsters than banknotes.

As a consequence, since the nineties, magnetic stripe cards have been replaced by so called EMV chip cards using "chip and PIN" for authorization. More than 2.3 billion cards and more than 36 million terminals have been

deployed to date. Increasing numbers of countries have already migrated to EMV in the hope that a standardized offering will reduce fraud and boost interoperability. EMV specifications can be used for debit and credit cards, either as contact-based, contactless, or even dual interface cards in various form factors, e.g. cards, fobs, key rings, etc.



Did you know...

...that G&D supplies 9 of the top 10 banks worldwide and 70% of the top 50?



Giesecke & Devrient
Creating Confidence.



EMV is an acronym for Euro-pay, VISA®, and MasterCard®, the card organizations that invented EMV back in 1994. Nowadays EMVCo (the company behind EMV) is made up of VISA, MasterCard, American Express®, Discover®, JCB®, and China UnionPay. These payment schemes also define the actual payment application running on the cards.

Goal of the introduction of EMV was to reduce the fraud which is possible using magnetic stripe cards or cards with signature only. Also the interoperability of cards worldwide due to the usage of standards was and is clearly the focus of the specification. Higher security comes with the same functionality, ease of use, and convenience people are used to. Therefore, EMV cards are highly accepted by users.

Higher security

Security is becoming more and more an issue and press releases about data breaches can be found in the news every week. EMVCo has tried to make EMV cards “more intelligent” than magstripe cards by using dynamic instead of static authentication, certification of the operating system, hardware, and applications, encryption algorithms, and other security measures. Digital signature, risk management, and better methods of cardholder verification protect the cards further.

But EMV cards have even more advantages than just security. The versatility of these cards opens up new revenue possibilities for banks. In addition to electronic payment, they can be used as tickets in public transport, as

loyalty cards, or for physical or logical access.

Migrating to EMV requires an experienced partner

Most of the countries in Europe have already migrated to EMV and some more countries are in the process of doing so.

Besides the reduction of fraud, it is also important to keep in mind that as of the beginning of 2015 we will see a liability shift defined by the payment schemes. Merchants will be responsible if fraud occurs due to the usage of magstripe cards at the point of sale.

Migrating to EMV smart cards is a highly complex process and banks need a strong and experienced partner. G&D has realized EMV migration projects in more than 50 countries worldwide.

Did you know...

... that G&D actively participates in all major standardization bodies and has played a major role in defining international standards for electronic banking solutions since the very beginning

For these projects G&D has invested heavily in new personalization facilities, e.g. in Twinsburg, Ohio, as well as in Mexico, Canada, India, etc. G&D offers banks a prompt, consistent, and seamless service with a complete solution including both products and services. This makes G&D a one-stop provider able to take care of migration in addition to full implementation.

This includes, for example, the entire key and data management process, personalization, packing, and shipping. G&D can also advise banks on system integration, project management, and technical issues. An online portal allows banks to provide information for the production process

and to manage their product lifecycles with configurable applications around the clock and from anywhere in the world. This allows G&D to offer the highest level of physical and logical security for the management of sensitive data together with the required level of security and confidence.

G&D as a one-stop shop for EMV projects

As an end-to-end full service provider, G&D can offer the full range of products, software, and services to banks migrating to EMV.

This comprises:

- Card configuration
- Key management
 - EMV keys
 - Certificates

- Tested / released EMV setup
- PIN handling and generation
- Data management
 - Data receiving
 - EMV data generation
 - Response data
 - End-to-end data encryption
- Chip card
 - Layout
 - Printing/production
- Electrical/optical personalization
- Associated services
 - Carrier printing
 - Value added packaging
 - Postage services
 - PIN services
- Inventory management
- Online services
 - Stock manager
 - Print manager
- Express cards
- Service level agreements

Did you know...

... that nowadays 40% of newly issued chip cards are EMV compliant and in 2015 nearly 70% of all payment cards will have a chip





G&D can also deliver dual interface cards and applications running on a mobile phone. These contactless devices are becoming more and more prominent and in the near future nearly half of all cards will have a contactless interface.

In addition, G&D actively participates in all major standardization bodies and has played a major role in the standardization of international specifications of electronic banking solutions from the very beginning. G&D is member of the Smart Card Alliance (SCA), where

G&D makes major contributions within the working groups. G&D is a member of GlobalPlatform and is actively driving the card committee. G&D is also very much engaged in the EMF, the EMV migration forum for the US.

G&D has successfully implemented a huge number of EMV migration projects.

G&D is a top player in the EMV area

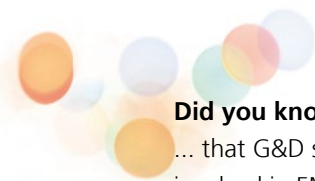
There are many good reasons to choose G&D for EMV migration projects:

- G&D has an exhaustive portfolio regarding EMV products and services
- With 500+ projects successfully implemented, G&D has a lot of valuable experience in this area
- G&D's offering is very flexible and comprises consulting, product selection, EMV migration, and personalization
- For contactless and dual interface cards, G&D is the market leader in the US

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Did you know...

... that G&D serves 500 global and regional banks worldwide and has been involved in EMV migration projects from the very beginning