



Giesecke+Devrient

Smart Contactless Ticketing

Convenience and
speed with future
mobility on board



We offer world-class contactless technologies and products...

The ever-growing number of passengers on urban transit networks is overwhelming. Ensuring an easy and smooth passenger flow is crucial for enabling higher throughput and leveraging the full capacity of their infrastructure. G+D has the experience and expertise to provide secure ticketing solutions to fit your needs today and tomorrow.

Our current contactless product portfolio includes contactless plastic cards and other form factors. As a long-established

and trusted partner, G+D offers a wide variety of card materials in addition to various standard contactless technologies and individual customer solutions.

While a magstripe or contactless ticket made of paper is perfect for occasional users of public transit, holders of monthly or annual tickets can be provided with a sturdy plastic card or wearable. Several different plastics are available to suit all kinds of customer requirements and ambient conditions

(temperature, humidity): PVC, composite materials, and premium polycarbonates, depending on the required lifespan of the card.

G+D offers the Crystal Card, which is a smaller form factor with a sophisticated look and feel.

Our range of contactless cards covers the whole spectrum of transit operators' and ticketing system integrators' needs, offering much more than the mere card.

MIFARE Calypso CIPURSE CEPAS...

Profit from the most extensive and widespread contactless technology which represents the largest installed base worldwide. G+D supports the entire MIFARE family with the following smartcard technologies:

- MIFARE Classic as a cost-efficient entry to MIFARE
- MIFARE Plus to migrate to higher security
- MIFARE DESFire to expand to highest security
- MIFARE Ultralight is ideal for limited use

Through the Calypso Network Association (CNA), G+D is an official provider of Calypso technology for contactless ticketing. This contactless international standard was designed by major transport operators and has been in the market for about 20 years. It is a mandatory functionality for specific markets (e.g. France and Belgium).

Furthermore, as a founding member of the Open Standard for Public Transport (OSPT) Alliance, G+D has supported the CIPURSE specification right from the start and in October 2013 was the first smartcard company worldwide to ship such cards to Brazil.

G+D also supports customers worldwide with additional technologies like MOC, MOT, and CEPAS, among others.



...and a whole spectrum of services to cover your needs

Implementing contactless ticketing comes with its challenges. That's where G+D comes in. We support transit operators and ticketing system integrators make contactless ticketing a success.

G+D's comprehensive portfolio of services covers all the bases with workshops,

local and highly responsive customer care, and ongoing development of existing systems.

G+D has been active in the transit sector for almost three decades and during this time has acquired keen insight into the needs of its customers around the

globe. Benefit from our proven contactless ticketing expertise gained from numerous projects.

G+D takes the complexity out of the process and provides guidance with a complete portfolio of products, technologies, and services.

These include:

	<p>CONSULTING G+D begins working with the customer at an early stage in the process to ensure that appropriate products and card bodies are chosen, and provides professional project management throughout deployment.</p>		<p>INITIALIZATION Chip check and chip ID approval.</p>
<p>PERSONALIZATION High-value season and annual tickets can be optically personalized with passenger ID, name, photo, etc.</p>			<p>LETTERSHP Personalized customer letter sent out to the end customer with the personalized card.</p>
	<p>LOGISTICS Intelligent warehousing for secure card delivery to end user.</p>		<p>DISTRIBUTION G+D can take care of distributing cards to points of sale and stocking automated machines.</p>

Going mobile – bring contactless ticketing to the next level

G+D is at the forefront of developing mobile ticketing for greater passenger convenience without compromising security. With more and more travelers relying on flexible, mobile solutions, from

smartphones to wearables, transit operators are now leveraging mobile solutions to address changing passenger expectations.

FROM CONTACTLESS CARDS TO SIM- AND eSE-BASED SOLUTIONS

The same technology that is used for contactless access to public transit systems can be implemented on mobile devices.

G+D is the global partner of choice for transit operators interested in benefiting from NFC. The G+D portfolio covers key elements of the system including NFC SIM and embedded Secure Elements (eSE) and Convergence eSIM/eSE products.

SECURE MOBILE TICKETING APPLICATIONS

Meet your customers' expectations and needs with mobile ticketing apps. G+D is your connected partner with expertise you can rely on.

The digital revolution has changed the way we live our lives, but it has only just begun. However, mobile devices are becoming increasingly valuable, and hackers are shifting to attack more and more mobile apps containing valuable data.

The challenge for app developers and providers is to ensure user convenience and to maximize user reach while providing the best protection.

G+D makes a mobile ticket secure and compatible with all mobile devices by

- Using barcode tickets compatible with all current smartphones
- Making the barcode dynamic
- Binding the ticket to the device
- Using state-of-the-art cryptography, based on a client and server principle
- Protecting the app from being tampered with, debugged, or reverse manipulated



G+D – your ticketing partner of choice

Experience matters. G+D has been successfully supplying the transit industry with contactless cards for over 25 years. But G+D is more than a card supplier. Transit

operators and ticketing system integrators choose us as a valued partner for many good reasons.

- ✓ **BROAD RANGE OF PRODUCTS AND TECHNOLOGIES (GLOBAL AND LOCAL)**
G+D's portfolio consists of global and local volume products, e.g. the entire MIFARE family, Calypso, and CIPURSE, as well as local technologies like MOC, MOT, and CEPAS.
- ✓ **COMPLETE PORTFOLIO OF SOFTWARE AND SERVICES**
Software as a managed service and relevant value-added services, e.g. consulting and personalization or lettershop services, which complement the product portfolio and provide G+D customers with a one-stop solution.
- ✓ **GLOBAL SUPPORT CAPABILITIES AND LOCAL PRESENCE**
G+D is at home in over 40 countries. Always close to the customer, the company is able to respond quickly and flexibly to customer requirements. Proven experience on every continent worldwide.
- ✓ **AN INNOVATION-DRIVEN PARTNER**
Contactless card pioneer: G+D delivered the first commercial contactless card worldwide in 1995. Leading participation in industry standards: ETSI, GP, GSMA, FIDO, OSPT, etc. Mobile applications: Secure mobile ticketing, HCE payment solutions, App security.
- ✓ **SOUND TRANSIT EXPERIENCE**
G+D has supplied over 150 million contactless cards and tickets for transit customers worldwide just in the last three years. 50 million passengers worldwide use G+D contactless card ticketing every day.
- ✓ **A LEADER IN SECURE PERSONALIZATION SERVICES**
Trusted partner for hosting sensitive customer data. G+D provides end-to-end solutions including secure personalization services.
- ✓ **ESTABLISHED MARKET PRESENCE**
With over 160 years of success, G+D has the stability and expertise to guarantee its customer's long-term partnerships and dependable supplier relationships. We have global relationships with handset and wearable manufacturers, financial institutions, connectivity service providers, automotive manufacturers, and governments.

We are proud to have been named among the top #3 vendors worldwide for over 10 years by ABI Research!



Managing identities in a connected world

G+D Mobile Security is a global mobile security technology company headquartered in Munich, Germany. The company is part of the Giesecke+Devrient group. G+D Mobile Security has a workforce of 5,300 employees and generated sales of approximately EUR 868 m in the 2018 fiscal year. More than 40 sales and partner offices as well as 20+ certified production and personalization sites and data centers ensure customer proximity worldwide.

G+D Mobile Security manages and secures billions of digital identities throughout their entire lifecycle. Our products and solutions are used every day by commercial banks, mobile network operators, car and mobile device manufacturers, business enterprises, transit authorities, health insurance providers, and their customers to secure payment, communication, and device-to-device interaction. G+D Mobile Security is a technology leader in its markets and holds a strong competitive position.



Giesecke+Devrient

Giesecke+Devrient Mobile Security GmbH
Prinzregentenstrasse 159
81677 Munich
Germany

www.gi-de.com/mobile-security
mobilesecurity@gi-de.com

Follow us on:



© Giesecke+Devrient Mobile Security GmbH, 2020

