



Direct online payment of penalty fares

The PIN pad is linked via Bluetooth to the hand-held inspection terminal and can be used to take payments e.g. by Girocard (EC card) immediately. The PIN pad sends encrypted payment data via the CASIO IT-9000's UMTS connection to the bank's authorisation systems to ensure that transactions are handled securely. Successful payments are confirmed on the PIN pad and a receipt can be printed.

Deployment of mobile inspection and payment terminals by S-Bahn Berlin

Convenient online facilities

When inspecting electronic tickets and other new ticket types such as m-tickets or print-at-home tickets, the ticket inspectors employed by S-Bahn Berlin use an innovative solution by Systemtechnik, which is installed on CASIO multifunctional terminals. A brand-new feature of this system is the ability to make direct and secure payments by EC card. Cards are read using a Bluetooth-linked PIN pad and authorised online via the CASIO terminal's wireless UMTS connection. The IT-9000 hardware performed so much better that the number of tickets inspected immediately rose by more than 35%. The resulting increases in the concentration and efficiency of inspections mean that the new technology is likely to pay for itself within a short space of time. Passenger service standards have also improved significantly.

The red and yellow S-Bahn trains are just as much a part of the Berlin cityscape as the Brandenburg Gate and the television tower. On weekdays, up to 1.3 million passengers use the 15 S-Bahn lines, which cover a distance of more than 330 kilometres. S-Bahn Berlin GmbH is a wholly owned subsidiary of DB Regio AG, which in turn forms part of DB Mobility Logistics AG, the mobility and logistics wing of Deutsche Bahn AG.

Since its establishment in 1995, S-Bahn Berlin has undertaken a consistent programme of investment in its rolling stock and associated technologies. This programme has now moved into the field of mobile information logistics, with practical hand-held inspection terminals that allow inspectors to inspect tickets extremely quickly and reliably. By significantly reducing the number of fare dodgers, this ultimately guarantees fare revenues and ensures that the company remains economically viable.

User:	S-Bahn Berlin GmbH 10115 Berlin - www.s-bahn-berlin.de
Industry:	Transportoperator
Application:	Mobile data collection, ticket inspections, online payments and receipt printing on trains
Produkte:	Hand-held: CASIO IT-9000 with CCV fly PIN-Pad Software: VAS (Systemtechnik)
Partner:	Systemtechnik GmbH D-99610 Sömmerda - www.systemtechnik-online.de



Fast online ticket inspections

The CASIO IT-9000 can check the validity of tickets purchased online at lightning speed using the integrated 2D imager.

A user-optimised hand-held terminal

CASIO considered a number of factors when developing the new IT-9000 series multifunctional terminal, such as the increasing demands of the e-ticketing market, suggestions made by S-Bahn Berlin and the various experiences of Systemtechnik experts. The end result was a robust hand-held inspection terminal that reads and inspects tickets of all kinds at lightning speed using RFID/NFC technology and a 2D imager. It also features a high-resolution digital camera that can be used to collect evidence of criminal offences or damage. The Bluetooth-linked external card reader with PIN pad and wireless UMTS connection allow for direct online bank payments by EC card.

Fast and reliable ticket inspections

Inspectors have been using the new hand-held inspection terminals in S-Bahn Berlin trains since late 2013. Uwe Streithoff, head of the Transport Services Department at external service provider WISAG, is more than happy to pass on the positive feedback from his team. „The entire inspection process - from reading the various ticket types and checking their validity to carrying out any blacklist comparisons - is much quicker now. The process will become even quicker in future, as more and more people are using electronic tickets. Our employees enjoy working with the lightweight devices and are pleased that they don't require any protective cases or special carriers. They also like the fact that the terminal is splashproof, especially the receipt printer, since our inspectors change trains a lot and are often unable to avoid getting caught in the rain.“

The new hand-held inspection terminals also feature mobile card readers known as CCV fly PIN pads. These practical add-on devices mean that the current fine of EUR 40 can be paid directly by Girocard (EC card) whenever necessary, for example if a penalty fare is incurred. This is far more practical than the offline direct debit procedure used prior to this, which transport companies disliked because it made it difficult for them to know whether they would ever receive the payment. The new fly PIN pad is approved by the German Banking Industry Committee (formerly the German Central Credit Committee) as a secure payment terminal for use with all major debit and credit cards (with chip or magnetic strip). It can also handle Girogo and Girocard transactions, which incur much lower authorisation fees for the operator than credit cards.

A world first: Girocard on the train

S-Bahn Berlin is the first transport company in the world to use a hand-held inspection device together with the new CCV fly PIN pad for online EC card payments on the go. Gerd-Peter Willbrandt, head of Sales Management at S-Bahn Berlin, highlights the advantages for customers: „The new CASIO terminal and PIN pad combined are hugely practical. The new hand-held inspection device can carry out extremely fast inspections of all ticket types, so that the



Online EC card payments using the secure PIN pad

For the first time ever, secure debit and credit card payments (for cards with chips or magnetic strips) can be made using a CCV fly payment terminal approved by the German Banking Industry Committee (formerly the German Central Credit Committee).



Touch&Travel or m-ticket inspections using the the integrated 2D imager

The Casio IT-9000 can read tickets with conventional bar codes or modern 2D codes (e.g. from a mobile phone display, as shown here) using the integrated 2D imager. The Systemtechnik software instantly checks whether they are valid.

inspectors only need to bother passengers for a few seconds. If a penalty fare needs to be paid, we can save customers a lot of time by allowing them to pay online by Girocard.“

Other potential applications

The CASIO multifunctional terminal has a number of other features that are currently used only occasionally. One such example is the SMS functionality, which allows messages to be exchanged between inspectors and the control room. The integrated GPS module can also be useful if an inspector needs to be located in case of an emergency. Local public trans-

port companies already make frequent use of the ability to collect evidence of criminal offences or damage. Detailed images can be captured with the integrated digital camera, and then immediately transferred via UMTS to the central control room where necessary.

The new CASIO hand-held inspection terminals were introduced after a two-day training course for inspectors. The standard procedures for inspecting tickets, collecting customer data and issuing receipts are not that different to those followed for the previous generation of devices. The main new feature is the ability to take payments using the PIN pad, made easy thanks to the simple user guidance. The hand-held inspection terminal also has a more compact design, which, along with the much better performance of the CASIO IT-9000, ensures a significantly smoother workflow. According to Helmut Jaskolka, „The egg timer on the display doesn't need to be there. The NFC reader barely has time to capture the e-ticket before the inspection has been carried out and a green tick is shown on the screen to say that the ticket is valid.“ Gerd-Peter Willbrandt can also confirm that performance has improved. „Nowadays each train inspector inspects an average of 560 passengers per day. Last year, this figure was only 410. This increase of more than 35% can be attributed to the fact that more people are using electronic tickets (currently around 20%). These can be checked instantly by the new hand-held inspection devices.“

Bianca Brandis, S-Bahn Berlin



Instant photographic documentation of damage

The CASIO IT-9000 hand-held inspection terminal has an integrated digital camera with flash so that damage and litter can be photographed and documented as soon as they happen.



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