

Whitepaper

# ID-/Account-based E-Fare

New ways of providing higher service quality



*Transit agencies can achieve their primary goal of offering an attractive public transportation system only if they stay competitive in the quality of their service offerings. Today's passengers require easy access to convenient ticketing options. This is especially true for occasional users of public transit who may not understand the fare structure. Innovative fare options from INIT offer the solutions both you and your passengers need. The results? Better access to services and greater potential for increased ridership.*

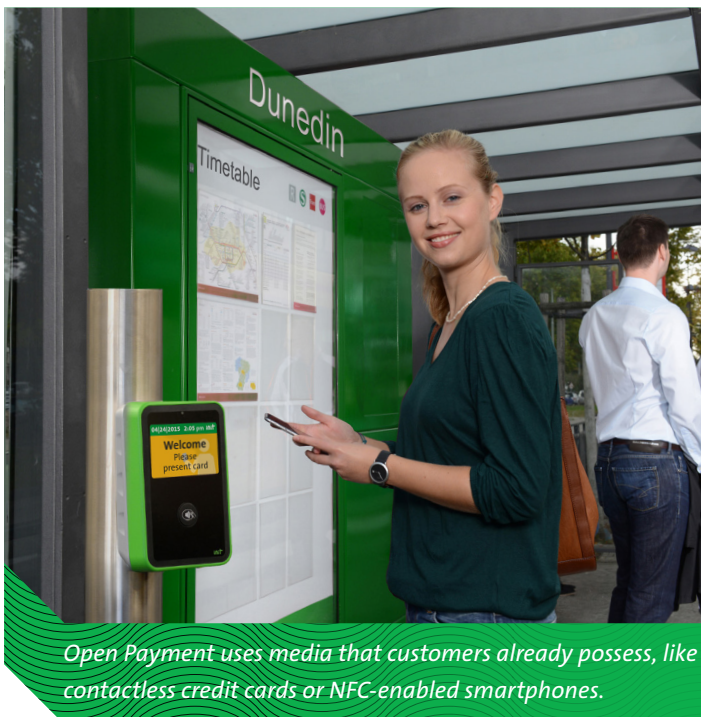
# More flexibility. Better service.

The requirements are clear: Even when passengers are unfamiliar with the fare structure of the transportation company or association, they want to buy the right fare simply and quickly, and at the lowest possible price. Innovative e-fare systems offer the right solution for breaking down the barriers of access to public transit. They support intermodal travel chains, deliver best price options and facilitate a customer-oriented mix of distribution channels.

Lately, there has been a significant boost to innovation in the field of e-fare solutions. Standards such as EMV have been established and are now complemented by ID-/account-based systems and Open Payment methods. The resulting improvements mean that transportation companies are increasing their investments in e-fare solutions.

## Open Payment

With Open Payment, the payment methods that the passenger already uses – such as contactless credit cards or NFC-enabled smartphones with credit card emulation – can be used to purchase tickets. This trend can be observed, in particular, in areas where paying with credit cards is already extremely popular. The advantages are clear: Passengers can use public transit without additional hurdles. They do not have to install an app first or buy a smartcard – they can simply use a medium that they already possess, and they don't have to worry about potentially unused credit balances. The transit agency on the other hand is spared the administration costs for its own media and the complex management of remaining credit balances. Open Payment options can be very easily integrated into ID-/account-based fare systems due to the similar technical approach used.



Open Payment uses media that customers already possess, like contactless credit cards or NFC-enabled smartphones.

## Intermodal payment network

*Modern e-ticketing systems support another mega-trend – the implementation of intermodal travel chains. The interlinking of transportation services and sales systems of various modes of transit is increasing in significance because it offers passengers a vital increase in convenience. The only way for customers to avoid the hassle of a completely different payment method for each step of their journey is through an intermodal travel chain – if they for example, start their journey with a train ride, then transfer to a bus, and complete the last few kilometers with a rental bike. Ideally, the entire travel chain should be supported by a smartcard and billing systems that cooperate with each other.*

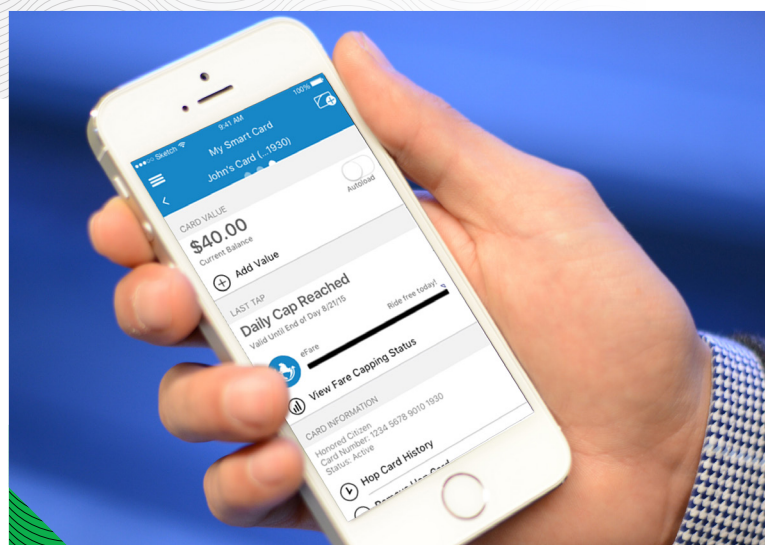


## ID-/Account-based E-fare

In ID-/account-based fare systems, all the data and the fare logic are exclusively stored in the back office system. Each customer card has a unique account linked to it, in which the current balance and associated products are stored. The cards themselves are only used for clear identification of the user account (therefore, the technology is called ID-based).

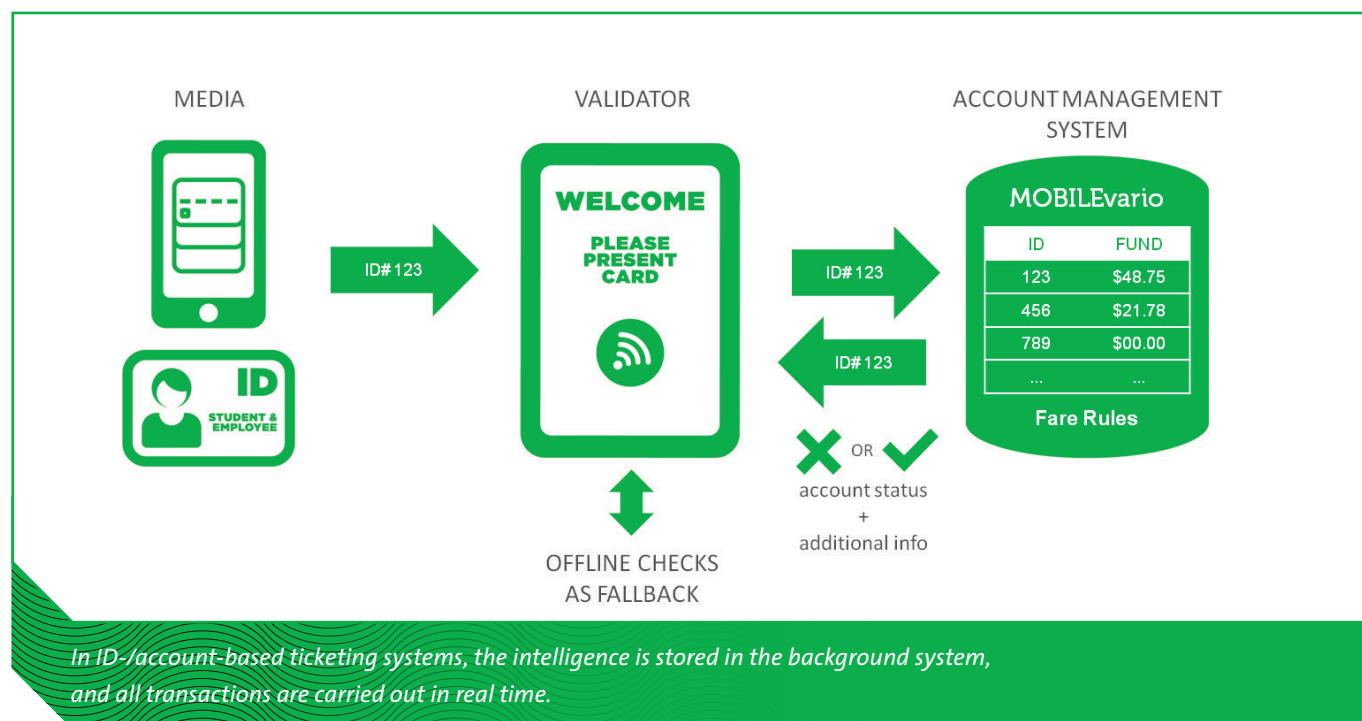
To buy tickets or add credit to the account, the field device, such as a passenger terminal, sends a query to the central back office system. This does a check of the query in real time, performs the necessary transaction, and sends a response back to the field device, which only reads the card and is not aware of the transit company's fare system.

ID-/account-based fare systems rely on fast, reliable communication between the field devices and the central back office system because the passenger terminals must receive the response to a query in real time. Fast 3G or 4G mobile networks now make this possible. Since full coverage at all times cannot be guaranteed, however, a rapid and reliable



*The smartphone as a distribution channel: Customers can use it not only to purchase tickets, but also to manage their accounts.*

processing has to be ensured even without a communication link. For this purpose, the field devices are provided with offline evaluation rules (such as hot lists and white lists). This enables the ticket terminal to carry out a risk assessment locally and also validate the requested transaction offline. In any case, an ID-/account-based system from INIT guarantees that a checking procedure will not take any longer than 500 ms, so that the passenger can get through the process with virtually no delay.



## Powerful back office system: MOBILEvario

The back office system plays a crucial role in all account-based systems, especially since all transactions from the field devices are checked and processed in real time. Therefore, all fares, products, and checking requirements are defined in MOBILEvario rate management module. The user is largely free to choose the design of new products or the modification of existing products and can easily define complex fare products through INIT's unique rule-based approach. Once the new fares are defined, the changes are put into production. From that moment on, the changes are active and are incorporated into every new accounting transaction. At the same time, MOBILEvario constantly updates the offline information on the field devices. In turn, sales data are immediately available in MOBILEvario. Hence, they can be used in the revenue management, as well as in the statistics module, and can be transferred for accounting.

The back office system can also be operated as a multi-client system to minimize investment and operational costs. The participating companies maintain their corporate independence as MOBILEvario ensures that each client only sees the data that is released for shared use. At the same time, the participating companies benefit from the lower costs of a shared infrastructure.

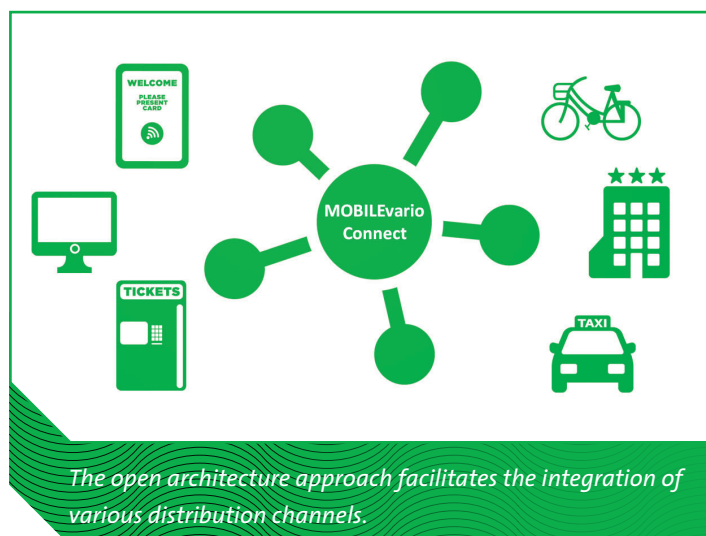
## Open system architecture = multiple distribution channels

MOBILEvario is well-prepared for what the future holds. In addition to the extraordinary range of functions and its multi-client architecture, it offers a high degree of investment security with its open architecture approach.

The individual components of the ticketing system are connected to MOBILEvario via open interfaces. This way, existing third-party systems can be easily integrated and additional specialized solutions can be connected to the back office system with no complications. With this open system architecture and the concentration of intelligence in the background system, multiple distribution channels can be integrated at low cost, and individual modules can be updated or expanded at any time. This allows for the range of passenger services to be easily expanded at any time at a reasonable budget. The interfaces are integrated both into MOBILEvario's security concept and its rights and role management, so that transit agencies can precisely establish secure access for all system participants.

This also applies to institutional customers, who can now manage their accounts much more conveniently through websites that are developed specifically for them. They can now directly determine which employee or student gets which product and how the institution promotes participation in public transport. This enables the institution to have a much better overview of their expenditures, and allows the transit agency to save on administration costs. The extremely simple processes offer significant potential for attracting additional institutions and companies as key customers.

In addition to common sales devices, ideally passengers also have online applications available on their smartphone or PC to allow them to conveniently manage their user account, top up their credit balance, or purchase a time pass. As additions to credit balances are done in real time, they can be used immediately in ID-based ticketing systems. There is no latency between activation/addition and the actual use of the credit balance. This is a very significant advantage for all riders, who want to use their credit balance immediately.



## Best price calculation

In terms of service orientation, the transit agency can take things a step further and offer its customers the best price calculation. This ensures that passengers always pay the best possible price for transport. They simply validate their card at each entry. If they should reach a determined cap, the system automatically ensures that charges will be made only up to this limit and no more (fare capping). The caps can apply both for daily and monthly tickets. MOBILEvario even allows users to set additional, freely definable time periods. Consequently, some transit agencies don't continue the sale of stripe cards, daily, or monthly passes. This provides exceptional convenience because the passengers no longer have to think about which product is best for them. The ticketing system automatically calculates the best price. Incidentally, this is also more socially equitable for lower-income individuals who have been reluctant in the past to purchase a monthly ticket which at the end could have been the more economical decision.

## Time is money

ID-/account-based systems offer participating transportation companies significant advantages. Fare changes become effective immediately in all distribution channels, and on all field devices. This eliminates time-consuming update procedures, particularly within interoperable and intermodal systems, in which changes need to be carried out and coordinated via the systems of multiple participants and technology partners. An ID/account-based system provides for considerable decreases in expenditures while allowing the transit agency to offer flexibility to its customers.

Since all transactions become available to the transportation company at any time – and in real time – this allows all partners to receive updated and correct information about their revenues continuously. In addition, a transit agency can identify and react to changes immediately. The security of the system is increased through so-called fraud detection procedures – the same analyses credit card institutions



*Travel made extremely easy. The system automatically calculates the best price.*

apply. These tests determine if a card/ID is being used in a way that suggests an attempt to commit fraud. But transit agencies can also notice a sudden increase in use immediately, contact the customer directly and, if necessary, react appropriately to these changes in usage behavior.

## Bottom line

ID-/account-based systems offer many advantages to both passengers and transit agencies. They offer transportation companies the opportunity to give their passengers easy access to the right ticket by using multiple distribution channels and innovative methods, while keeping their own expenditures under control.

If all the possibilities for modern ID-/account-based fare systems are used, where applicable in combination with Open Payment methods, a uniquely accessible ticketing system evolves that enables every potential customer to easily purchase the right ticket.



# INIT E-Fare Portfolio

## Background system

### MOBILEvario for fare management and clearing

Range of features:

- Account management
- Fare management with business rule editor
- Online validation
- Best price calculation
- Hotlist management
- Revenue management
- Financial settlement
- Export to financial accounting
- Maintenance of master data

Technical information:

- Supports all common ticketing standards, including VDV-KA, ITSO, Calypso etc.
- Supports Open Payment methods, such as EMV
- Supports intermodal payment networks
- Open architecture approach
- Standardized interfaces for simple interlinking of additional distribution channels
- Multi-client capability
- Extensive rights and security management



## On-board the vehicle / at the stop

### PROXmobil3

- Passenger terminal for vehicles and stops
- Hybrid card reader
- Compact housing
- Backup storage of sales data



## On-board

### EVENDpc2

- PC-based ticket printer and on-board computer
- Full on-board computer functionality
- Paper tickets, barcode tickets, hybrid card reader
- Large touch screen with compact dimensions
- Highest computing performance
- Backup storage of sales data



## At the stop

### VENDstation

- Stationary ticket machine
- All payment methods
- Accessible for disabled persons
- Card charges
- Issuance and return of cards



## Location-independent

Through the open architecture approach, simple integration of various smartphones or online applications as additional distribution channels, e.g.:

- Mobile ticketing
- Administration of the customer account
- Administration of institutional customers
- Pre-sale applications
- Telephone services

*If you would like to know more about ID-/Account-based E-Fare, please contact us at [sales@initusa.com](mailto:sales@initusa.com).*

*More than 400 customers rely on our integrated solutions to support them with their daily tasks*

- *Planning & Dispatching*
- *Ticketing & Fare Management*
- *Operations Control & Real-Time Passenger Information*
- *Analyzing & Optimizing*

*They also benefit from our proven Service & Maintenance support.*

---

INIT is the worldwide leading supplier of integrated ITS, planning, dispatching and fare collection systems for buses and trains. For more than 30 years, we have been assisting public transit agencies in making public transit faster, safer and more efficient.

#### **INIT**

[sales@initusa.com](mailto:sales@initusa.com) | [www.initusa.com](http://www.initusa.com)

Karlsruhe & Hamburg/D | Brisbane/AUS | **Chesapeake/USA** |

Dubai/UAE | Montréal & Toronto/CDN | Neuhausen/CH |

Nottingham/GB | Singapore/SGP | Tampere/FIN

