



Overview of booked tickets

SATELLIC ELECTRONIC TICKETING

THE SIMPLE WAY – INFRASTRUCTURES FOR MASS CHARGING

In the road user charging segment for heavy vehicles in open networks, today's predominant technologies are based on DSRC and GNSS. However, some of the digital successors of paper vignettes remain i.e. virtual or electronic tickets.

Satellic Electronic Ticketing delivered by T-Systems can be deployed as a standalone system for low-scale

application or as a plug-in to the Satellic Tolling Platform. It can also serve as an access method for selected vehicle classes and/or as a short-term, fall-back process for GNSS-based tolling (e.g., in case of force majeure).

SALES CHANNELS

Satellitic Electronic Ticketing supports multiple sales channels.

- **Web portal**

For users or booking assistants with terminals such as desktop computers, laptops or fully web-enabled on-board devices.

- **Mobile portal**

For users with mobile phones featuring a mobile web browser.

- **Call center**

For drivers without computer equipment. The call center also delivers customer support.

- **POS terminals**

For drivers on the road wanting to book electronic tickets immediately before use. POS terminals can be indoors and attended or outdoors and unattended.

- **POS partners (web service)**

Typically, POS operators use their own POS equipment to sell electronic tickets. The connection to the toll service provider's system is provided by a web service business interface.

USER REGISTRATION

Depending on the toll service provider's (TSP) business model, Satellitic Electronic Ticketing can support both registered and non-registered users. Registered customers can book and manage electronic tickets for their vehicles with ease and are charged via their consolidated account. Occasional users who do not wish to register for a single booking transaction can use the electronic ticketing module anonymously as a non-registered customer. In this case, payments are processed and verified immediately as part of the sales transaction. Not all sales channels support bookings from both registered and non-registered customers.

TARIFF SCHEMES

Satellitic Electronic Ticketing supports a wide range of tariff models and can be customized to meet toll service provider needs. Tariff parameters typically depend on the vehicle characteristics, but other features such as regions (zonal schemes), time classes (weekday/weekend, peak-hour tariffs) and user classes (residents) may be relevant. The system is prepared for booking trips with specified routes.

WHITE LIST MANAGEMENT

Electronic ticketing systems register all bookings in a central repository, called the white list, hence rendering paper vignettes redundant. Paper vignettes are difficult to enforce and open to fraud. Satellitic Electronic Ticketing helps TSPs safeguard revenues and reduces technical system complexity and cost.

Users are provided with an electronic ticket mainly as a reminder of their booking details and as an easy reference to the white list entry. If a non-registered customer makes a purchase, the electronic ticket also serves as a payment transaction receipt. Users may be able to cancel or modify bookings prior to the start of validity (possibly for a fee). However, precise customization depends on the TSP's business processes.

The white list can also be used for compliance checks (enforcement), preferably (for data privacy reasons) by distributing it to the responsible enforcement body. An additional central cross-check of suspicious cases is typically performed to eliminate false positives due to distribution timings. Staff checking driver compliance in the field can be provided with direct access to the central white list so they can perform checks. Satellitic Electronic Ticketing supports all major enforcement systems and makes full use of the existing enforcement infrastructure and procedures already in use for HGV tolling (e.g., Germany or Belgium).



Login screen for mobile devices

IDEAL SOLUTION FOR PASSENGER CAR TOLLING

Satellitic Electronic Ticketing may be used as a fully-featured passenger car road charging system. In such cases, the electronic ticketing solution presented offers advantages such as much better fraud resistance and higher flexibility at lower distribution costs compared with existing paper vignette systems.

It can be implemented within a short timeframe and with low risk as it is cloud-based and requires no road-side infrastructure.

Payment details and booking summary

Enforcement

Additional resources are required for compliance checking processes, although the possibility of sharing use of the existing infrastructure for HGV tolling might reduce the additional investment necessary and raise the cost value ratio of the existing equipment.

Tariff schemes

Satellitic Electronic Ticketing supports a large number of schemes due to the variety of possible combinations of vehicle types and additional scheme parameters. It is applicable to passenger cars as well as to HGVs.

Tariff selection screen

The investment is future-proof thanks to the possibility of combining schemes for different chargers, e.g. national road authorities, states or counties, local municipalities and even private infrastructure operators.

Easy and comfortable access

While the booking system's main business process is clearly the sale of tickets, there are other important features that simultaneously increase customer satisfaction and reduce operating costs by offering self-service functions:

- Extension: Active bookings can be extended (e.g., a user holding a long-term booking might want to add usage of a trailer for a certain day to the existing ticket).
- Modification: Tickets can be modified prior to the start of validity to correct information or change the services booked.
- Cancellation: Tickets can be canceled prior to the start of validity. The price is refunded using the initial payment means.

Mobile access

Support for smartphone usage offers new flexible payment features like "auto-top-up", pay-per-use or support for 3rd party payment services, e.g., PayPal, fuel cards or credit cards.

Wallets for electronic passes enable perfect integration in smartphone environments. The mobile version fully supports all solution features like cancellation, extension and modification of bookings.



Passbook entry

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