Satellic NV: Forward-looking technology

Full, precise collection of road tolls for trucks in Belgium

Reference project:

Satellic

“Having fully built up the very first fully EETS compliant tolling system in Europe makes T-Systems the undisputed technological leader in this field and a trend setter in the tolling industry. Satellic is often regarded and cited as a model for the future of tolling in Europe.”

Elisabeth Verbrugge, Chief Executive Officer of Satellic NV

Belgium is one of the European transit countries for the international transport of goods with a very well-developed road and highway network, maintained by the three regions Brussels, Flanders, and Wallonia. In 2014, the three regions decided to replace the sticker-based road toll system for trucks weighing 3.5 tons and more with a satellite-based road toll system. The new system had to take into account the fact that each region manages its own road infrastructure autonomously. Accordingly, different road toll rules applied. While Wallonia imposed the road tolls as a fee subject to VAT, Flanders and Brussels treat the road tolls as a tax. Moreover, a variety of payment options had to be supported for road users. As the majority shareholder and main supplier to the road toll service provider Satellic NV, T-Systems is responsible for operating the truck road toll solution in Belgium and for the full, precise collection of the road usage charges.

At a glance

- Replacement of the sticker-based system for truck tolls in Belgium
- Designing, building, financing, maintaining and operating the entire road toll solution in Belgium by T-Systems as part of a consortium
- Road toll recording through global satellite navigation systems (GNSS)
- No additional road infrastructure needed for toll collection; merely the construction of control bridges in selected locations
- Procurement and distribution of the on-board units
- Correct, efficient calculation of road tolls and distribution of revenues to the three regions

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Let’s power higher performance

Reference in detail

The challenge

In July 2014, the road toll provider Satellic NV was commissioned by the three Belgian regions Flanders, Wallonia, and Brussels to collect road usage fees for trucks weighing 3.5 tons and more. This included calculating the toll charges correctly – based on the kilometers driven – as well as collecting and distributing to the three regions. To give road users a high degree of flexibility, the toll system had to support a variety of payment methods. The toll system had to be set up and ready to operate within 18 months of following the contract signature. Moreover the new solution had to satisfy the requirements of the European directive on the interoperability of toll systems (EETS).This was a complex task requiring top security and quality standards, in addition to expertise in toll collection and the corresponding IT solution competencies in the recording, interpretation, and processing of big data. The new toll system needed to be based on future-oriented technologies and avoid investments in the road infrastructure wherever possible.

The solution

To operate the Belgian road toll system, T-Systems (majority shareholder) and STRABAG AG founded a new joint venture, Satellic NV. As the main supplier to Satellic NV, T-Systems provides the technological foundation for the toll solution.

T-Systems is responsible for designing, building, financing, maintaining and operating the entire road toll solution in Belgium as part of a consortium. T-Systems implemented and began operating the complete toll system in just 18 months. The road usage charges have been managed by the new toll solution since April 1, 2016. With the introduction of a “free-flow” toll system, toll stations and installations like separate toll lanes are a thing of the past in Belgium. In their place, T-Systems has established a modern, flexible solution. The on-board units (OBUs) required for the solution use global satellite navigation systems (GNSS) like GPS and GLONAS to determine the exact positions of vehicles. The road usage charges due are calculated in the OBU by determining the toll route traveled and applying the suitable rate (based on the vehicle size, emissions category, and region). Invoicing and processing of the toll payments takes place on the T-Systems tolling platform, which runs in a central downstream system. To enable this, the respective data is transmitted securely from the OBU to the back end. Satellic NV has served as the national road toll operator in Belgium since the go-live and has been TÜV-certified as compliant with the ISO standards 9001 and 27001. Currently, around 600,000 trucks are equipped with Satellic OBUs. The toll transaction data of around 140,000 heavy good vehicles is recorded daily on the 6,700 kilometers of toll roads in Belgium, with international trucks comprising a major share.

Customer benefits

With the road toll solution from T-Systems, Satellic NV offers future-oriented, state-of-the-art toll services in Belgium. The satellite-based road toll system supports the correct, verifiable, efficient, use-based collection of road usage fees with a minimum of additional road infrastructure. There is no need to build toll bridges for position recording or toll collection, for example. Toll bridges are used merely for controls. Thanks to its modular structure, the toll system can easily be expanded and linked with other systems, such as systems for traffic analysis. The Belgium road toll system employs pioneering technology. According to an assessment by the European Commission, the road toll solution from Satellic NV represents the future model for toll collection in Europe.

Further advantages:

- Leading technological solution from an experienced road toll operator
- Efficient, correct collection of road usage fees
- Reduced road infrastructure thanks to “free-flow” GNSS toll system
- High integration capability and expansion options, for example, for local roads or other regions

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