



# TRAFFIC INTELLIGENCE





At present, an efficient and well-functioning transport sector and the quality of transport infrastructure itself are a prerequisite for the further growth of the economy and ensure the competitiveness of a country.

Ongoing changes in the market environment are influenced by dynamic technological developments. Therefore, the process of selecting an ITS solution and a service provider requires the contracting authorities to focus on the following parameters: construction speed, construction and operation costs, the flexibility of the solution and, of course, the quality, reliability and the potential of the system's further development.

The fact that SkyToll is able to deliver quality results has been proven by its successful projects.

In design, development and operation, we place an emphasis on the profitability as well as on the quality of the solution. We build on the synergy of state-of-the-art, world-recognized and, in the long run, progressive technology.

We are able to solve the new requirements of contracting authorities with maximum flexibility. We can simply add a new system or a service required for an existing solution.

Thanks to unique know-how, SkyToll is strategically ready to remain a major player in the intelligent transport solutions market in the future as well.

For an extraordinary contribution to road transport development, SkyToll received a global award in 2015 from the International Road Federation. The Global Road Achievement Award is given annually to institutions that bring forth innovative projects in the field of construction as well as the maintenance of the roads and motorway networks.

**Ing. Matej Okáli**

CEO and Chairman  
of the Board of Directors of SkyToll, a.s.



## COMPANY MILESTONES

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| <b>2008</b> | SkyToll is active in the field of electronic toll systems  |
| <b>2009</b> | SkyToll wins a tender for an electronic toll system for vehicles weighing over 3.5 tons in Slovakia  |
| <b>2010</b> | Designs, constructs and commissions the electronic toll system in the Slovak Republic  |
| <b>2012</b> | Complete replacement of the central system during full operation in 2012   |
| <b>2013</b> | Extension of the toll system to 17,763 km of roads in 3 months   |
| <b>2015</b> | 2015 IRF Global Achievement Awards for expanding the toll sections by an additional 15,312 km<br>Deployment of a Weigh-in-Motion system<br>SkyToll wins a tender for electronic vignettes for vehicles weighing less than 3.5 tons in Slovakia<br>On 2 December 2015, launches electronic vignettes in Slovakia<br>Designs an electronic toll system solution for the Russian Federation |
|             | A pilot project for charging fees in Moscow's developed urban zones  |
| <b>2016</b> | Pilot project on electronic monitoring and fee collection for road usage in Uruguay  |





## SKYTOLL PROFILE

SkyToll has worked in the area of intelligent transport information systems capable of analysing and directing traffic anywhere in the world since 2008.

As the first in the world, it was able to create a unique solution combining the advantages of several technologies - **satellite** GNSS location technology, **microwave** DSRC technology for short distance communication, and **mobile** GSM technology to communicate within mobile networks and apply it not only to motorways, expressways and first-class roads, but also lower-category roads.

A significant advantage of satellite technology compared to other road charging technologies is the flexibility of implementing new requirements. It is capable of managing a future increase in traffic volume and the expansion of the road network.

And this happens without the need of building a costly roadside infrastructure required for toll collection.

As of 1 January 2010, SkyToll has operated one of the most state-of-art electronic toll systems in the world, putting Slovakia among the **leaders in electronic toll collection**. The system covers the largest road network in the EU with over 17,611.2 kilometres of specified sections of motorways, expressways and first, second, and third-class roads.

Since December 2015, the company's significant references include the construction and operation of the electronic vignette system in the Slovak Republic for vehicles weighing less than 3.5 tons.

At the international level, the references also include pilot projects and consulting activities in the construction of toll systems in the Russian Federation, Uruguay and other countries.



### THE COMPANY'S BIGGEST SUCCESS STORIES

- We completely built and commissioned the satellite electronic toll system in only 11 months.
- The electronic toll system covers the longest network of specified sections of motorways, expressways and lower-category roads in the European Union with a total length of 17,611 km.
- The ETC system achieved the highest efficiency of toll collection right after the first year of operation - 98.99%.
- Thanks to SkyToll's e-Vignette system, the cost of the government was reduced by up to 60%.

### OUR COMPETENCES

- Consulting
- Pilot studies
- Project management
- Funding
- Technical operation
- Commercial operation
- Support and maintenance
- BPO (Business Process Outsourcing)

Our work is like a set of blocks - by joining various alternatives, inserting new ones and changing the arrangement of the existing ones, or their replacement for more modern ones, we always create an original and unique piece.



# ELECTRONIC TOLL COLLECTION

On 1 January 2010, the Slovak Republic commissioned one of the most state-of-art electronic toll systems, putting Slovakia among leaders in electronic toll collection worldwide.

After expanding the toll system to all first, second and third class roads, SkyToll now operates the longest road network in the European Union covered by an ETC system.

The toll collection satellite technology covers almost 17,611 km of specified road sections in the Slovak Republic, including about 700 km of specified sections of motorways and expressways, around 3,690 km of specified sections of first class roads, an additional 3,600 km of specified sections of second class roads, and over 9,500 km of specified sections of third class roads.

The introduction of the electronic toll collection has almost tripled the revenues for the Slovak Republic compared to those of the motorway stickers used in the past.

SkyToll is the only contractor within the EU able to design, develop and commission a complete and fully operational electronic toll system in only 11 months.

Today, the satellite toll system used in the Slovak Republic is technologically prepared to integrate the European toll service providers from neighbouring countries, fully in line with the requirements of the future European Electronic Toll Service based on the principles of "one contract - one OBU - multiple toll systems". Thanks to the technology applied, it can quickly and flexibly implement the future changes and rules of the European Union in pan-European traffic policy.



## PROJECT

Design, development, funding, operation and maintenance of a complex electronic toll collection service.

## LAUNCH DATE

1 January 2010

## IMPLEMENTATION PERIOD

11 months

## TOLL ROAD CATEGORIES

Motorways, expressways, first, second, and third-class roads

## APPLIED TECHNOLOGY

A combination of satellite GNSS/GPS technology, GSM/GPRS technology and microwave (DRSC) technology

## EXTENT OF THE TOLL NETWORK

17,611.2 km

## PERIOD OF SYSTEM OPERATION

13 years

Other services provided by SkyToll for electronic toll collection:

- Toll collection enforcement and collection of fines
- Commercial back office
- Customer care
- Geo management
- Operational back office
- Marketing and PR



# ELECTRONIC VIGNETTE

## PROJECT

The service of electronic collection and records of payments for motorway vignettes for the use of the specified road sections

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## LAUNCH DATE

2 December 2015

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## PERIOD OF IMPLEMENTATION

3 months

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## TOLL ROAD CATEGORIES

Motorways and expressways

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## EXTENT OF THE TOLL NETWORK

558 km

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## TYPE OF CHARGING

Time-based

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## TYPE OF USERS

Passenger cars weighing less than 3.5 tons

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## CONTRACT DURATION

5 years, 7 months

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Other services provided by SkyToll for the electronic vignette:

- Commercial back-office
- Customer care
- Operational back-office
- Marketing and PR

On 2 December 2015, the Slovak Republic commissioned an electronic system for the collection and registration of electronic vignette payments for the use of specified sections of motorways and expressways. Putting the system of e-vignette payment collection and records in electronic form meant a change in the vignette form - paper motorway stickers replaced by vignettes in electronic form.

The obligation to purchase an e-Vignette before using specified sections of motorways and expressways in the Slovak Republic generally applies to motor vehicles with a total weight of up to 3.5 tons.

In the Slovak Republic, it is possible to purchase e-Vignettes with a:

- 1-year validity
- 30-day validity
- 10-day validity

The introduction of this modern and cost-effective technology has allowed the government to cut costs in connection with vignette sales by up to 60% while simultaneously increasing sales.

SkyToll was able to design and commission a fully operational e-Vignette system within 3 months.

The SkyToll solution helps ensure that the main goals of deploying the electronic form of motorway vignettes are met, in particular ensuring the effective collection and registration of payments and, in particular, increasing user comfort.

RUSSIAN  
FEDERATION

## ELECTRONIC TOLL COLLECTION



**The Russian Federation has joined other countries in charging for the road infrastructure using an electronic toll system based on Progressive Satellite Technology. On 15 November 2015, they introduced the Platon toll system intended for collecting tolls for using federal roads by vehicles weighing over 12 tons.**

**The toll charges over 50,000 km of roads across the Russian Federation. The toll system uses approximately 2 million On-Board Units (OBUs).**

In addition to using OBUs for electronic toll collection, toll payment in the form of tickets is also available for drivers on transit routes. Compliance with the toll payment obligation is checked by almost 500 enforcement gantries.

In designing the electronic toll system solution for the Russian Federation, SkyToll utilised the experience gained in designing, developing and operating the electronic toll system in the Slovak Republic.

Though there was an incomparably greater range of fees, the main issues related to electronic tolls and operational processes were met thanks to many years of experience.

SkyToll, as a project consultant, developed an electronic toll strategy and a methodology for measuring and evaluating the quality of the system.

The services provided included the design of business processes within the electronic tolling system, their architecture, the revision of system requirements as well as the functional specifications and a design for the toll system's development.

The pilot project using satellite technology for charging fees in Moscow's developed, urban areas was implemented by SkyToll in only 14 days. Forty kilometres of roads were charged in total.



## URUGUAY

ELECTRONIC  
TOLL SYSTEM

**Before the start of the project, the Uruguayan government collected tolls using the so-called “stop and go” system, applying RFID technology. Many vehicles subject to the toll payment for motorways were able to avoid the small number of toll plazas and thus avoid paying tolls altogether. In addition to more efficient tolling, the aim of the pilot project was the monitoring of transport in Uruguay and processing the monitoring data for future use.**

In 60 days, from September to November 2016, SkyToll successfully implemented a pilot project for electronic monitoring and the collection of fees for road usage, which included 4,615 road sections of different categories.

SkyToll provided consulting services for the design, construction, funding and operation of the electronic toll system as part of a comprehensive nationwide government project aimed at implementing an ETC system.

The pilot solution covers nearly 8,241 km of specified road sections charged by the most advanced toll collection technology, which operates on the principle

of GPS navigation, i.e. recording the position of each vehicle via a navigation device (On-Board Unit) inside cars and GPS satellites.

The electronic toll system in Uruguay uses technologically innovative OBUs integrating the following technologies:

- Satellite GPS positioning technology
- GSM / GPRS communication technology within mobile networks
- Existing microwave RFID technology for short- distance communication with OBUs and enabling the service of existing stop-and-go toll gantries.

The chosen toll collection technology provides for the maximum flexibility of the system to manage the future growth of cargo transport volume as well as the expansion of the road networks in Uruguay.

# CERTIFICATES AND AWARDS

SkyToll, a.s. introduced and adheres to the Integrated Management System (hereinafter "IMS") according to the requirements of the following ISO standards:

- Quality management system in accordance with **STN EN ISO 9001: 2016 / EN ISO 9001: 2015,**
- Health and Safety Management System in accordance with **STN EN ISO 14001:2016 / EN ISO 14001:2015,**
- Health and Safety Management System in accordance with **STN OHSAS 18001:2009 / OHSAS 18001:2007,**
- IT Service Management System in accordance with **STN ISO / IEC 20000-1,**
- • Information Security Management System **STN ISO / IEC 27001:2014: ISO / IEC 27001:2013**





In 2015, SkyToll received the **2015 Global Road Achievement Award**, given annually by the International Road Federation to private and public companies as well as organizations for their outstanding contribution to the development of road-transport. SkyToll received the award in the category of “transport management and intelligent transport systems” for a project of expansion of the scope of the Slovak ETC system in 2014.





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