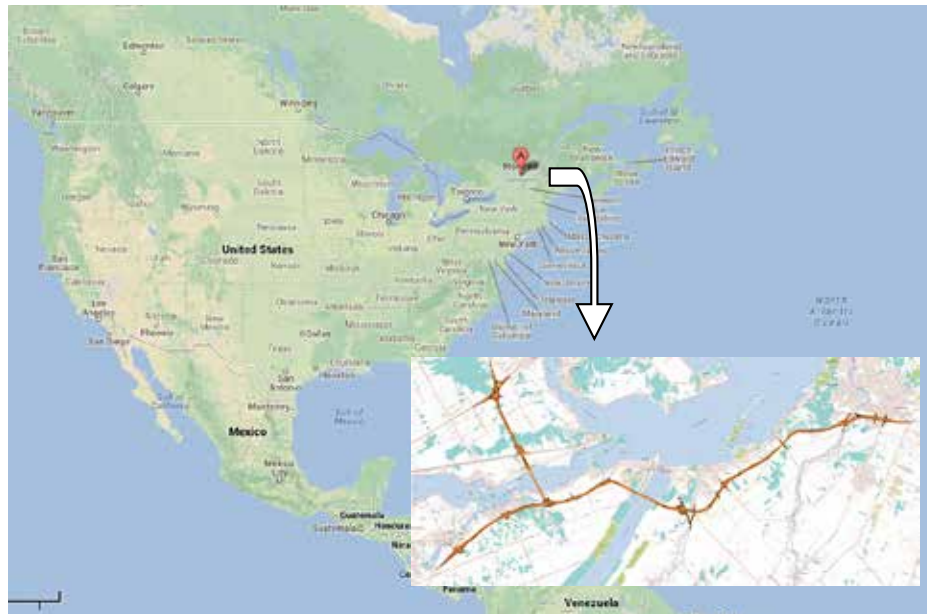




IMPLEMENTATION OF SMART TRAFFIC AND TOLL SYSTEMS IN MONTREAL'S A30 EXPRESS HIGHWAY

DESIGN, SUPPLY, INSTALLATION, IMPLEMENTATION AND MAINTENANCE OF THE ITS, TOLL, BACK OFFICE, CUSTOMER SERVICE CENTER AND WEB SYSTEMS



Context

Construction of the A-30 highway in Canada

Though the collection of tolls had been eliminated, the need for expanding local highways, such as the A-25 and A-30, together with the lack of funds, brought tolls back to life to resolve mobility issues in Montreal.

Acciona and ACS-Iridium were awarded the contract for constructing, maintaining and operating a new A-30 highway and for traffic and toll management, using the market's state-of-the-art technology.

Infrastructure development through the public-private partnership (PPP) collaboration model

Smart traffic systems for the A-30 highway

Indra renders services related to the design, supply, set-up, implementation and maintenance of the toll systems based on free-float technology, and of the highway's Intelligent Traffic Systems (ITS), including back office, a customer service center and a website.

The solution designed by Indra for the A-30 Express is comprised of:

ITS:

- Gigabit fiber optic network along the entire highway with 10 communication nodes
- 34 CCTV cameras
- 45 laser vehicle detectors
- 6 variable message signs
- 2 weather stations
- A preventive closure system for the Beauharnois bridge
- Power supply from different transformer stations to each device
- ITS Control Center (control room, servers, operator workstations, etc.)

Toll Collection System (TCS):

- Toll booths for 14 lanes

Toll Collection System at the administrative building (BOS-CSC)

- Back-Office System (BOS)
- Customer Service Center (CSC), including web services and IVR
- Website

Global solutions for road traffic

Benefits

Technology in the service of mobility

- Global solution that increases road traffic safety, transmits user-related data, reduces necessary infrastructures, alleviates traffic jams and reduces transfer times.
- Remote system monitoring by using visual information (CCTV) on the highway's status in real time.
- Modular architecture that allows for multi-concession management for controlling several concessions and/or outsourcing upper management levels.
- Interconnection through interfaces between different systems and external entities, such as MTQ (Ministry of Transport of Quebec) or MJQ (Ministry of Justice of Quebec), which are able to monitor and control the highway's systems.
- Highway user access to manage their accounts and highway-related information (CCTV images) in real time through the website developed and implemented for the A-30.

Our knowledge of the business makes us capable of executing implementations in the short-term, thus assuring the fulfillment of established goals and minimizing risks

Results

Improved traffic safety

- Optimization of vehicular traffic flow.
- Constant and dynamic supply of information on traffic conditions, providing users real-time interaction.
- Contribution toward self-financing of the regional road infrastructure.
- Lower accident rate.
- Decrease in the pollution produced by each vehicle and of the cost of transporting goods.
- Facilitation of geographical mobility for persons and freight.

Indra in the sector

World leader in traffic management systems

Indra's offering targets public bodies and private companies involved in the operation and maintenance of roads in their different modalities (urban, intercity, highways, tunnels, tolls, bridges, etc.). We approach projects on the basis of a close relationship with the customer and an in-depth knowledge of their needs. Indra's solutions and services aim to improve road infrastructure management, offering the best service possible to society as a whole.

Among these improvements, we optimize and simplify the operation and maintenance of tunnels, implementing new, state-of-the-art safety methods that reduce costs. Likewise, we offer measures to improve mobility on roads and in cities, and offer integrated supervision and control systems for urban traffic lights, road tunnel installations and highways.

Our solutions include the design, development, engineering, production and development of applications and maintenance.

Non-proprietary and standard, these may be adapted to each customer's specific needs. No doubt, these improvements simplify service for the user.

We have successfully implemented these systems across other continents and countries.



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Indra reserves the right to modify these specifications without prior notice.