



# STORIES

ACTIVITY REPORT 2016



In 2016, VINCI Highways expanded its international network to include two new concessions in Latin America, and strengthened its expertise in ETC by acquiring a stake in the US and India based company ToliPlus.



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## PROFILE

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VINCI Highways' dedicated development, program management and operation teams work closely with local partners to design, finance, manage, operate and maintain highways, urban expressways, bridges and tunnels.

Present in 13 countries (Canada, Colombia, France, Germany, Greece, India, Jamaica, Peru, Portugal, Russia, Slovakia, the United Kingdom and the United States), we ensure that our 1,848 km network of highways and nearly 1,300 km of urban streets, as well as the bridges and tunnels under our responsibility, are safe and well-maintained for our customers. We also strive to provide attractive and convenient service areas where drivers can rest and refuel. VINCI Highways also develops, implements and maintains electronic toll collection (ETC) solutions, adapting them to each country's requirements.

At VINCI Highways, safety is our main concern. We provide team-specific training for operations personnel and efficient tools and methods for monitoring safety on our networks. We believe that well thought out, well designed and efficiently managed roads and ETC systems are the key to solving traffic congestion and reducing air and noise pollution in some of the world's biggest cities. ●

# GOVERNANCE

2016 was a banner year for VINCI Highways. We expanded our geographical footprint in Latin America with two major contracts in Peru and Colombia. We boosted our traffic management and toll collection expertise with the acquisition of Pex and a strategic interest in TollPlus.

In 2016, the four-pronged growth strategy we introduced in 2015 produced substantial results.

We continued to work with the Group's Construction businesses to expand our greenfield operations. In Colombia, we won a 30-year PPP contract together with Conconcreto to improve and operate the existing Bogotá-Girardot freeway; and in Germany, we finalized a further A-Modell expressway project in early 2017.

In brownfield operations, we acquired Lamsac, which holds the concession for the Linea Amarilla Highway in Lima, Peru. This is an important milestone in our ongoing effort to rapidly expand our operations into new countries and to boost our growth.

In our value-added electronic toll collection (ETC) service activity, we acquired Pex, the leading free-flow operator in Peru, and a strategic interest in TollPlus, a widely respected

ETC company based in Phoenix, Arizona, which also operates in Hyderabad, India. Our preferred bidder status on the Dublin M50 free-flow tolling in March 2017 is another proof of our successful expansion.

We also proactively continued our groundwork to develop future markets by forging partnerships in a variety of countries. In Russia, we signed an interoperability agreement with Russian State highways company Avtodor. In Vietnam, we concluded a partnership agreement with the Vietnam Expressway Corporation, the main publicly owned road operator, in September at a ceremony attended by the Presidents of Vietnam and France.

Meanwhile, we continued to expand, operate and maintain our existing asset portfolio in 13 countries and consolidated our positions in Germany and Russia, where we are the leading operator.

We opened the Ohio River Bridges to traffic and began operating the stretch of highway. Our ongoing construction work in Russia and in Canada is proceeding on schedule. The safety of the users of our assets and of our employees is always our main concern. We strengthened the real-time incident reporting process applying across our entire network and provide systematic training to raise employee awareness of safety.

The positive effects of these efforts are reflected in our LTIR\* statistics, which sharply improved in 2016.

In 2017 we will continue to manage our human resources and highway assets, roll out ETC and free-flow systems, seek untapped opportunities in promising geographies such as Africa, the Middle East and Asia and pursue both greenfield and brownfield expansion in our core countries. Our focus, as always, will be on achieving excellence in every project we develop and operate. ●

\* Lost Time Injury Rate.



**Fadi SELWAN**

Chairman and Chief Executive Officer, VINCI Highways



**Christian BIEGERT**

Executive Director  
Russia

**Cédric BRAUNWALD**

Chief Financial Officer

**Nicolas CHARLES**

Chief Technical Officer

**Arnaud JUDET**

Executive Director  
Germany

**Jérôme LEJEUNE**

Executive Director ETC

**Christophe MARTIN**

Executive Director  
North America

**Marc NEYRAND**

Development Director Europe,  
Middle East and Africa

**Panayiotis PAPANIKOLAS**

Executive Director  
Greece

**Bernardo SERAFIM**

Development Director  
Latin America

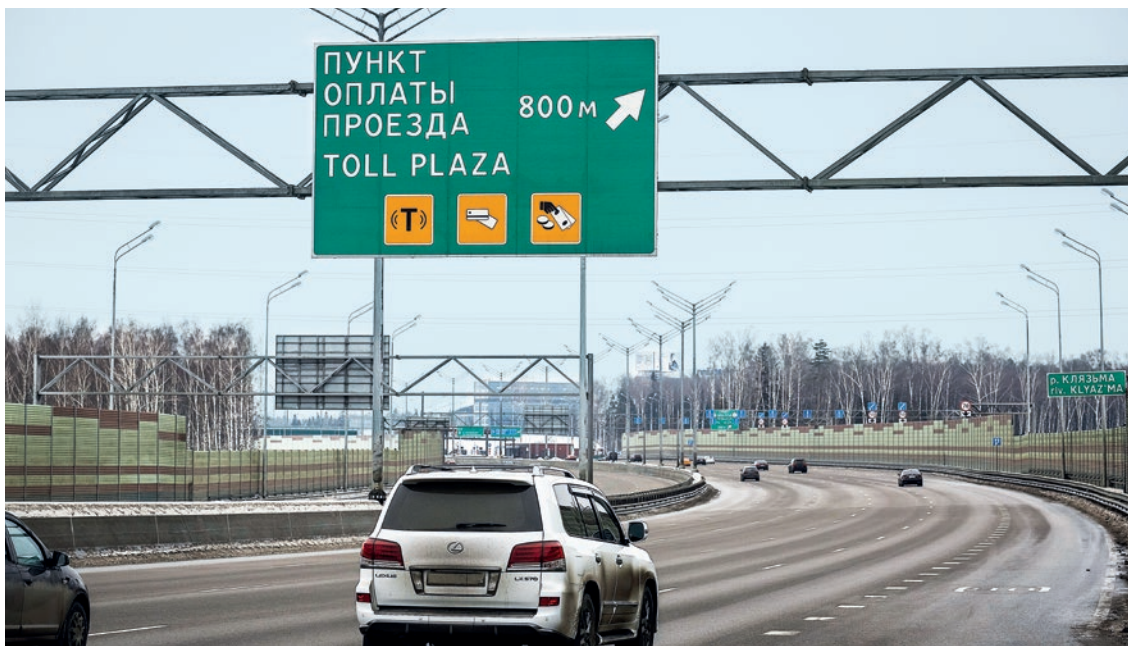
**Marcel VIAL**

Executive Director  
Slovakia

# 2016 HIGHLIGHTS

## RUSSIA

### INTRODUCING INTEROPERABILITY



The first toll tag interoperability contract in Russia was signed in May. This enables Russian drivers to use their electronic tag to pay tolls on any Russian highway, even those that are managed by companies other than VINCI Highways. ●



## LATIN AMERICA

### STRONG DEVELOPMENT POTENTIAL

VINCI Highways won contracts in Peru and Colombia, where governments are investing in major infrastructure. In its first acquisition in Latin America, VINCI Highways acquired the Lamsac company, which holds the concession for a 25 km toll road in Peru, and Pex, which operates the associated ETC system. ●



## GERMANY

## A BUOYANT MARKET



VINCI Highways through Toll Collect started implementation of the extension to the 40,000 km network of truck toll collection. Germany regularly invests in highways via its A-Modell program. VINCI Highways will continue to renovate, maintain and operate highway sections there in coming years. In early 2017, it was awarded the contract for a new 60 km section (A7-2) in Lower Saxony. ●

## CANADA

WORKING  
TO SCHEDULE

In Saskatchewan, a 61 km bypass is being built to decongest traffic and improve road safety around the province's capital, Regina. Work on the C\$1.4 billion (€1 billion) PPP project by VINCI Highways and its Canadian partners is on track for completion in 2019. ●



# THE YEAR IN NUMBERS

## Key figures<sup>(1)</sup>



### MANAGED REVENUE:

€703m

Total revenue generated by the entities managed by VINCI Highways according to IFRS. It rose by 15% compared to 2015.



### DAILY TOLL TRANSACTIONS:

847,900

Average daily number of toll transactions operated by the entities managed by VINCI Highways in 2016.



### NETWORK:

3,101 km

Total network operated or under construction at 31 December 2016.



### KILOMETERS TRAVELED:

12bn (+50%)

Estimated number of kilometers traveled by end-users on highways, expressways, bridges and tunnels operated by VINCI Highways in 2016 (excluding urban road networks).



### NUMBER OF EMPLOYEES:

4,658

Number of employment contracts with the entities of VINCI Highways at 31 December 2016.



### INVESTMENT IN CONSTRUCTION WORKS:

€1.1bn

Total investment made by the entities of VINCI Highways in construction works at 31 December 2016.



### OPERATIONS<sup>(2)</sup>:

24

concessions

13

service provider companies

13

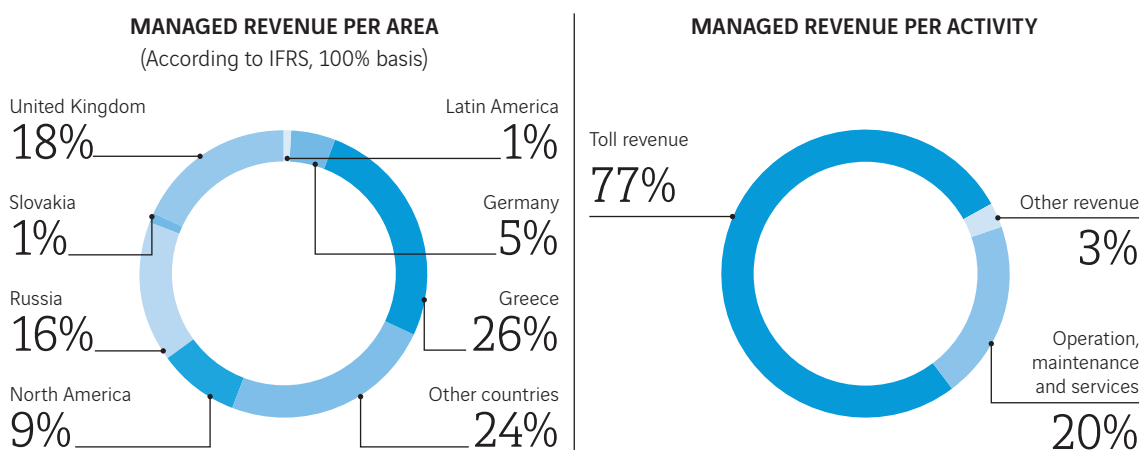
countries

(1) Unaudited data, excluding ETC Department unless expressly stated.

(2) Scope includes ETC Department.

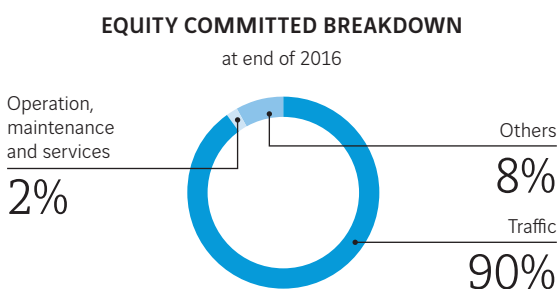
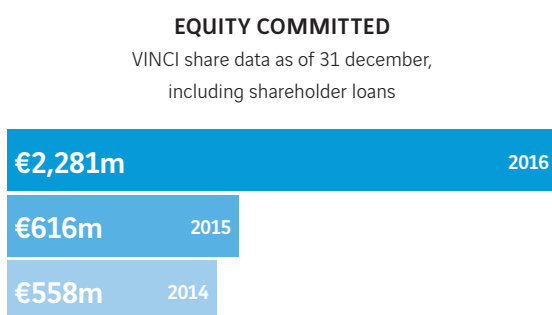
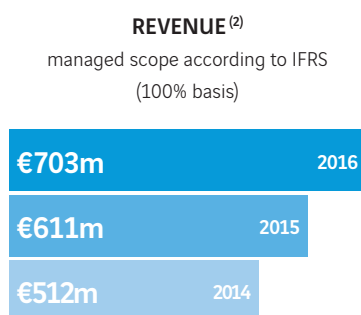


## REVENUE<sup>(1)</sup>



(1) Unaudited data, excluding ETC Department.

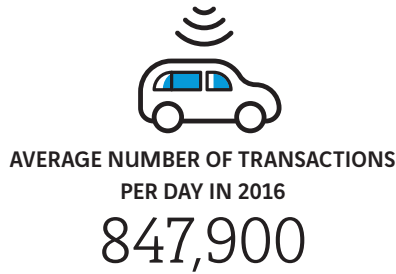
## FINANCIALS<sup>(1)</sup> — In €m



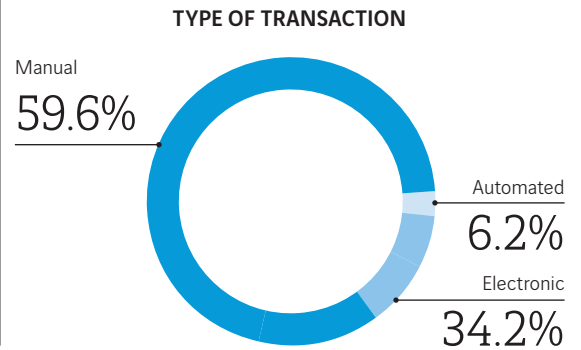
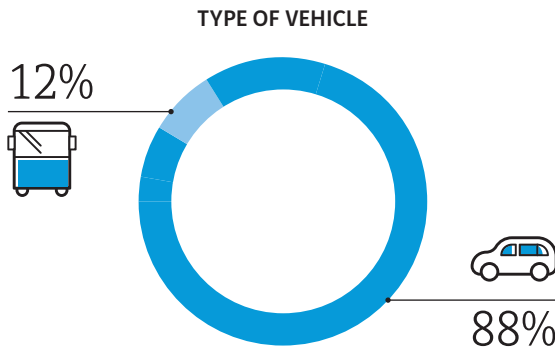
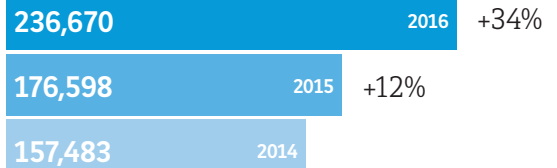
(1) Unaudited data.

(2) Excluding construction revenue.

## TRAFFIC<sup>(1)</sup>



### TOTAL NUMBER OF TOLL TRANSACTIONS (IN THOUSANDS)



(1) Excluding ETC Department.

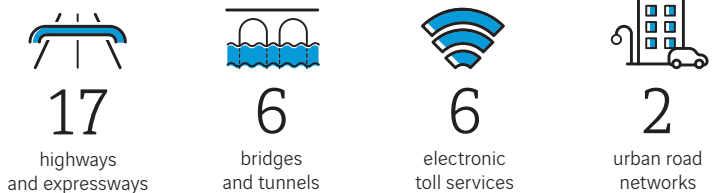
## NETWORK



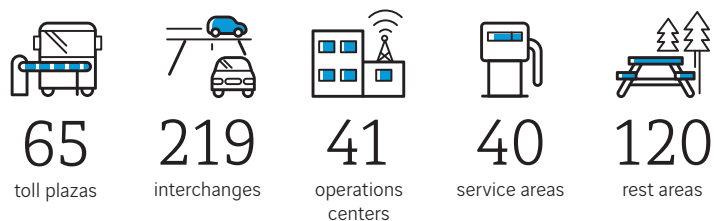
of which:



### OUR CONCESSIONS AND OPERATIONS BY TYPE

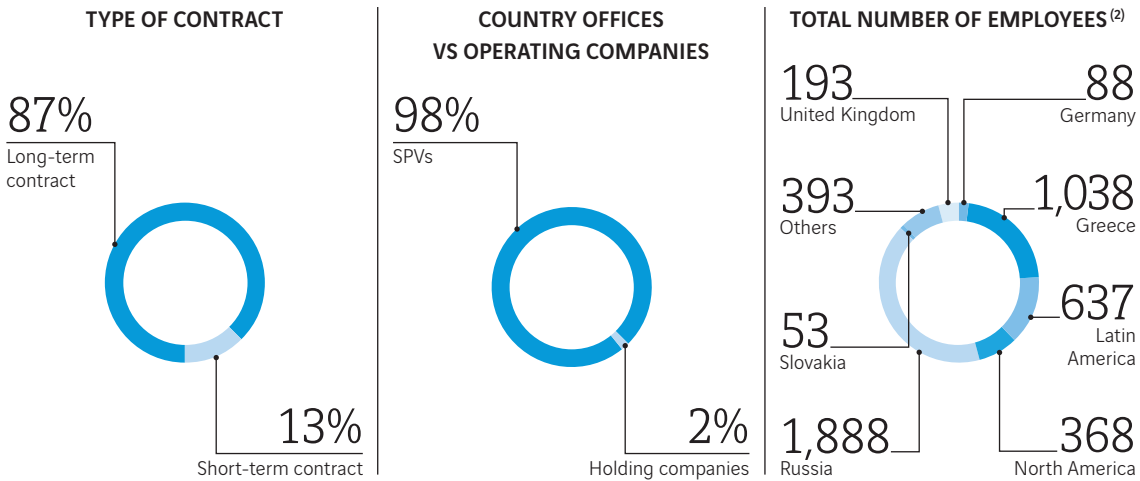


### WE ALSO OPERATE AND MAINTAIN:





## STAFF<sup>(1)</sup>



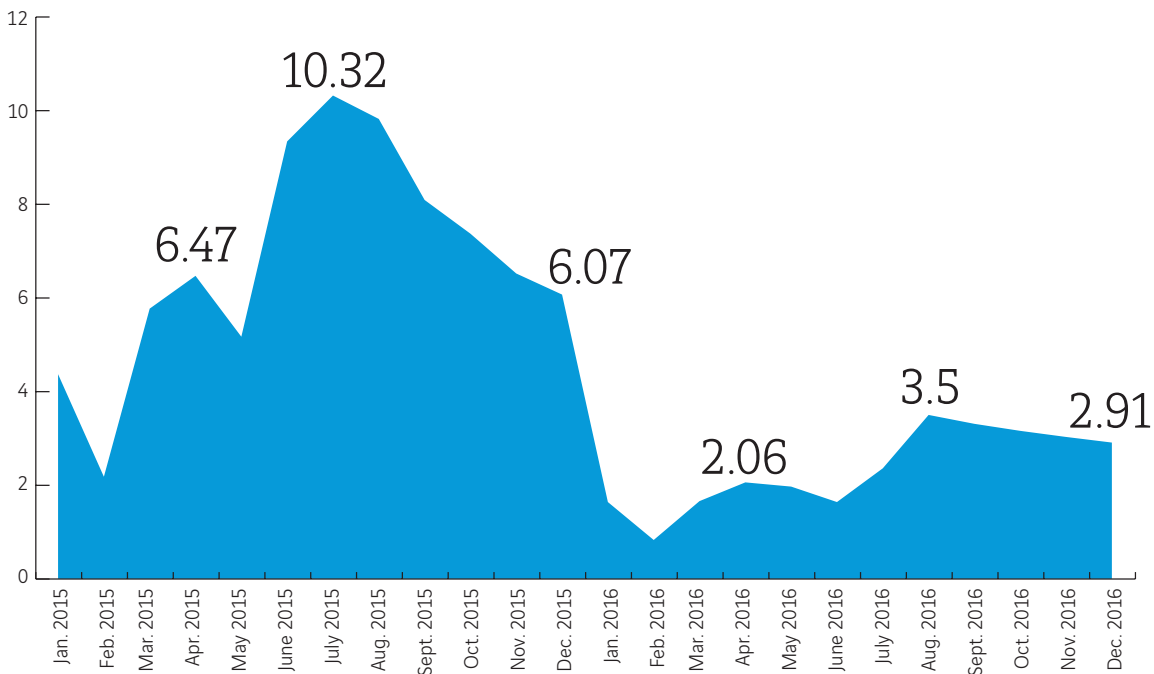
(1) Excluding ETC Department.

(2) Number of employment contracts (including country offices).

## SAFETY

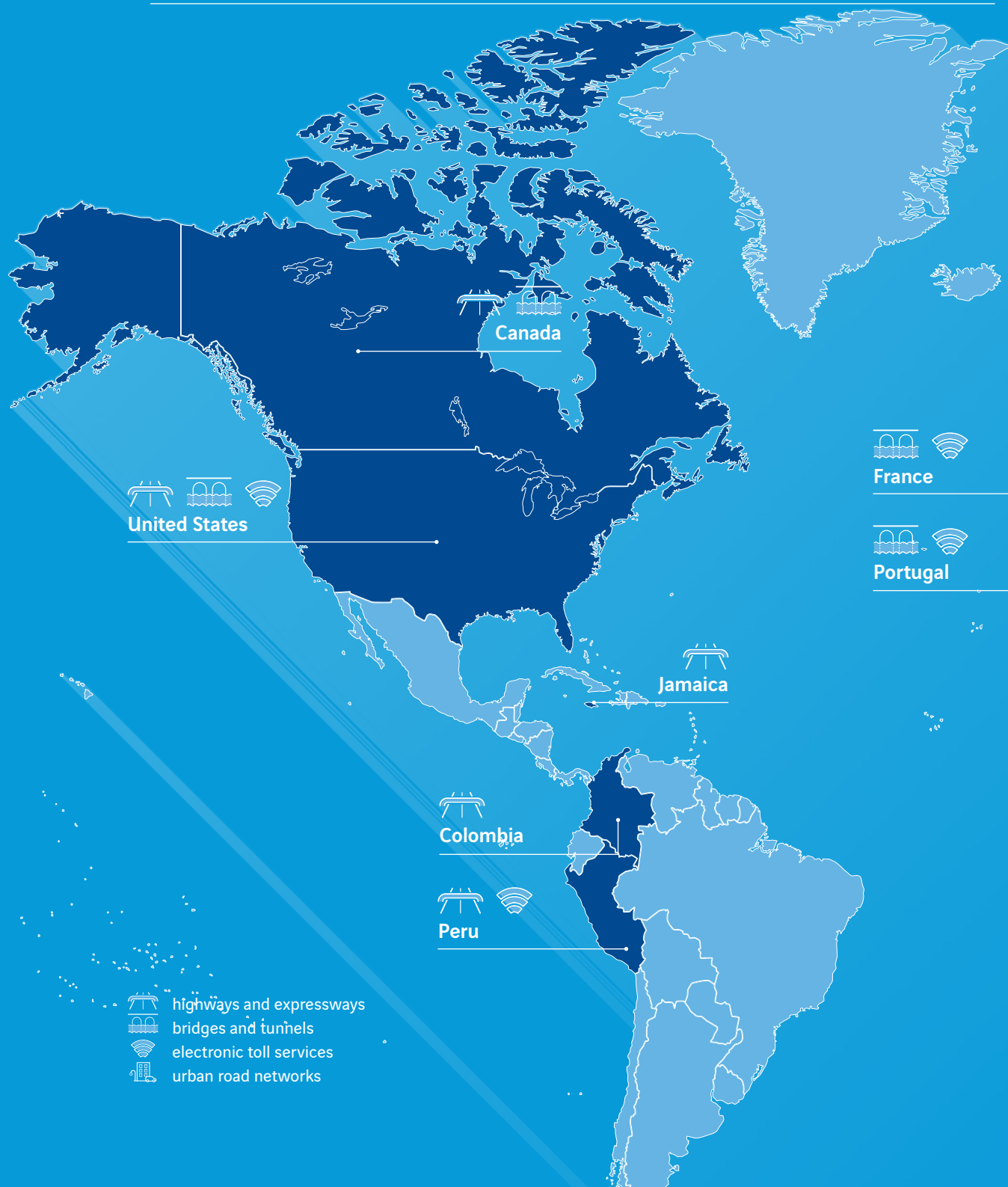
### VINCI HIGHWAYS' LOST-TIME ACCIDENT FREQUENCY RATE IN 2016<sup>(1)</sup>

(12-month rolling period)



(1) Number of lost-time accidents (own and temporary staff) x 1,000,000 / number of hours worked (excluding ETC Department).

# WORLDWIDE PRESENCE







# An integrated range of solutions and services

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VINCI Highways ensures the seamless execution of motorway projects from initial design and financing, through to construction, operation and management. We also offer innovative toll collection systems.

# VINCI HIGHWAYS IS GAINING MOMENTUM

VINCI Highways' success in offering public authorities a one-stop shop for their road infrastructure projects lies in three key capabilities: our ability to take on projects whatever their maturity, both greenfield and brownfield; our state-of-the-art toll systems; and our simultaneously global and local approach.

## Working with local partners

By sharing our best practices, we ensure that all our road projects meet the highest international quality, safety and environmental standards. By working with local partners in each country, we gain an in-depth understanding of requirements and are thus able to build a solid relationship with both government authorities and clients.

## Establishing contact with our clients

The concessionaire for Greece's Rion-Antirion bridge, Gefyra, won the Greek customer service 2016 "Innovation

in Customer Experience" award for its Citizen & Client Center, where customers have access to a wide range of services, from rest rooms to business centers. And in Slovakia, Granvia, the PPP concessionaire for R1 Expressway, launched a safety campaign in October 2016 for the 5th anniversary of the expressway, putting up new signs at the entrance of the Nitra and Banska Bystrica sections to encourage drivers to fasten their seat belts. ●



VINCI Highways is a shareholder of the Athens-Corinth-Patras and Maliakos-Kleidi highway concession companies, which should be fully operational in 2017. VINCI Highways has also been operating the emblematic Charilaos Trikoupis Bridge for over 10 years.





In Russia, VINCI Highways manages two concession contracts, it also manages 4 sections on A3, M4 and M11 highways.



## THE STORY RUSSIA

Three years of rapid development and several years of sustained effort culminated in the opening of the new 70-kilometer section of the M3 highway between Moscow and Kiev in March 2017, confirming VINCI Highways' position as Russia's leading private sector highway operator.



## ROAD TO THE FUTURE

VINCI Highways' initial contract in Russia, to construct section 1 of the M11 motorway, was signed in 2009 but progressed slowly, disrupted by economic downturns. Throughout this period, the company remained a committed partner supporting its public-sector customer, Avtodor.

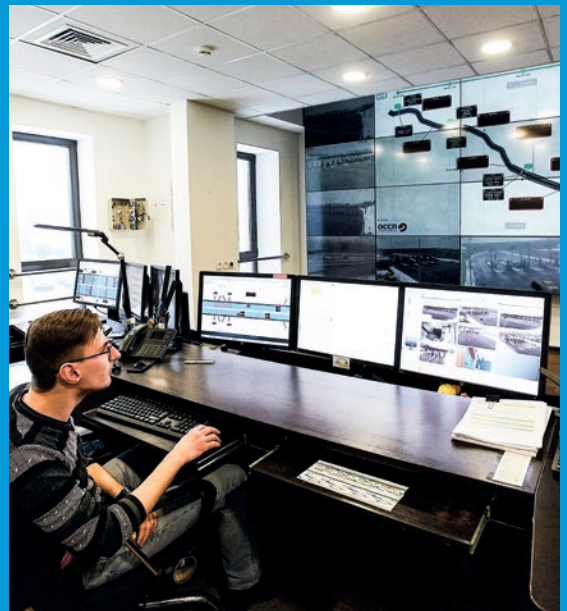
The company's long-term approach began to produce results in 2015, with the opening of the first section of M11, followed in 2015 by the closing of contracts for sections 7 and 8 of the motorway. The year also saw VINCI Highways acquire United Toll

Systems (UTS), a leading operator of highways and toll systems in Russia.

### Universal toll collection

VINCI Highways continued to build on this progress in 2016. In addition to preparing the M3 section for the March opening, the company accelerated construction of the M11 section, which is now scheduled for completion in May 2018.

During the year, UTS was successfully integrated and is now operating to VINCI Highways standards. The company also leveraged its expertise in electronic toll collection



“About 40,000 subscribers have signed up and 49,000 tags have been distributed to them since November 2015.”

VINCI Highways built and now operates the first 43 km section of the M11 toll motorway which connects the outskirts of Moscow to Sheremetyevo International Airport.



to develop the framework for interoperable systems that use a single transponder on all toll road infrastructure. The technology meets a priority goal of Avtodor and the Russian government to reduce traffic congestion.

Through the close relationships it has forged in Russia over the years, VINCI Highways is well positioned to continue to play a leading role in the country's expanding motorway network. ●

### Safer highways, bright prospects

VINCI Highways continues to provide its expertise across a range of activities, including motorway design, construction, financing, operation and maintenance. The company is raising the country's motorway standards, with particular attention to user safety on the roads it designs and builds.

VINCI Highways began work on sections 7 and 8 of the M11 motorway between Moscow and Saint Petersburg in 2016.



### WHAT NEXT?

There are interesting opportunities for growth in both highway operation and toll collection in Russia. UTS is interested in bidding to operate new stretches of motorway. Moreover, the second outer ring road currently being built around Moscow, which will be a 350 km long motorway, provides an opportunity for VINCI Highways to introduce electronic toll collection. ●

**3,260,000**  
Electronic toll transactions  
in 2016 on section 1 of the M11.

# The right expertise at the right time

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As an operator of world-class road infrastructure around the world, VINCI Highways combines the strengths of an integrated Group with the agility of local teams on the ground. It merges the expertise gained from previous projects with the know-how of in-country staff to provide a tailor-made response to each project.

# WORKING IN TANDEM

Every country has its own procedures, maintenance plans and operating costs. VINCI Highways can familiarise itself with them via the partnerships it establishes and use that knowledge in further development opportunities. VINCI Highways' development and asset management teams work in tandem.

Development teams are encouraged to get involved in asset management as this not only improves their overall competence, but enables them to gain experience that they can apply elsewhere. VINCI Highways has therefore set up teams that can be sent to support projects, assume program management responsibilities or share their experience.

## A two-way street

Learning from existing assets is a two-way street. While the new concessionaire brings its own local culture and understanding to VINCI Highways, it also absorbs

VINCI Highways' know-how, experience and way of working. But contrary to what one might think, VINCI Highways does not impose methods from a ready-made manual on a new asset, but rather develops unique processes adapted to each country's own culture. ●

In the United States, VINCI Highways operates the new 12 km highway connecting Indiana and Kentucky, which was officially opened in 2016. It is VINCI's first PPP in the United States.







In Peru, VINCI Highways acquired Lamsac, which is responsible for the concession contract for the construction, operation and maintenance of the Línea Amarilla toll expressway in the center of Lima.



## The story

# PERU

Peru's capital Lima covers a 2,672 km<sup>2</sup> urban area stretching along a narrow coastal strip between the Pacific Ocean and the Andes. A majority of the population of nearly 9 million uses public transport but traffic is often congested. As a consequence, Lima's municipal authorities developed solutions, notably the expressway carrying the heaviest traffic in Peru, the Línea Amarilla. It was operated by Lamsac and its dedicated toll collector, Pex, until 2016 when VINCI Highways acquired them both, marking a major milestone in the VINCI Group's expansion strategy in Latin America.



## A COMPLEX, AMBITIOUS PROJECT

The Línea Amarilla (yellow line) toll road, named for the yellow fence that currently runs down the center, will actually cut a green swathe through Lima's urban landscape.

The road runs alongside the Rímac River for much of its length. Part of the 25,800 km Panamerican Highway which stretches from Alaska to the bottom of Chile, the Línea Amarilla will run in an inverted

L-shape from the city's San Juan de Lurigancho district in the northeast, south to El Agustino and then west to the Callao district and the Jorge Chávez international airport.

The project will extend the urban expressway by 9 km to the airport via a 1.8 km six-lane tunnel under the river. This will bring the total length of the Línea Amarilla to 25 km.



Traffic on the Línea Amarilla expressway has increased by 6% per year over the last 10 years.

"VINCI Highways constantly strives to adapt its procedures and its approach to local conditions. The teams are very attentive to the specific features of each client. In Lima these include a complex geological environment along a river canyon in a dense urban environment where the goal is to facilitate traffic flow by encouraging drivers to pre-pay their toll tags."



VINCI Highways will also build bridges, underpasses and 10 viaducts. The road is set to open by the end of 2017.

Toll collection on the Línea Amarilla, where average traffic in 2016 amounted to 139,000 vehicles a day but is expected to rise once the road is finished, is adapted to local conditions: payment by bank cards is not widespread in Peru so toll booths must accept

cash. However, drivers purchasing an electronic tag will soon be able to use it not only to pay tolls but also to buy fuel. ●

The acquisition of Lamsac and Pex represent an investment of around €1.8 billion. The concession contract between Lamsac and the Lima local authority will run to end-2049.



## REDUCING CONGESTION

The main traffic challenge in Lima is to reduce congestion. One suggestion, which has already been adopted in many other large cities, is to create dedicated bus lanes that would be used by big, articulated buses, replacing the minibuses and collective taxis currently widely used in the Peruvian capital. ●

An average of  
**139,000**  
 vehicles a day  
 on the Línea Amarilla  
 expressway in 2016.



# Partnerships based on trust

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Together with its partners inside and outside the VINCI Group, VINCI Highways delivers the full range of skills required to build and operate a ground transportation project, from initial to the end of the contract.

# GROUP SYNERGIES

VINCI Highways provides expertise complementing that of the other Group companies and works with them to deliver a comprehensive range of infrastructure design, construction, financing, operation and maintenance solutions, around the world.

We all know how awkward it is to walk into a room of strangers and try to join the conversation, but also how much easier it is if one is accompanied by somebody who can introduce you. This is no different from a company trying to break into a new market. And who better to open those doors than another VINCI subsidiary already familiar with that market, such as VINCI Construction, VINCI Energies or Eurovia.

## Partnerships around the world

In Peru, VINCI Construction Grands Projets has already worked with the Graña y Montero group. It was a natural move for VINCI Highways to build on that relationship and establish a partnership to finish the Bela Unión bridge in Lima and the 9 km urban extension of Línea Amarilla. In Africa, Sogea-Satom,

a subsidiary of VINCI and the leading foreign construction company on the continent, could help introduce VINCI Highways. Thanks to VINCI's network, VINCI Highways is expanding its geographical base.

## Partnerships within the Group

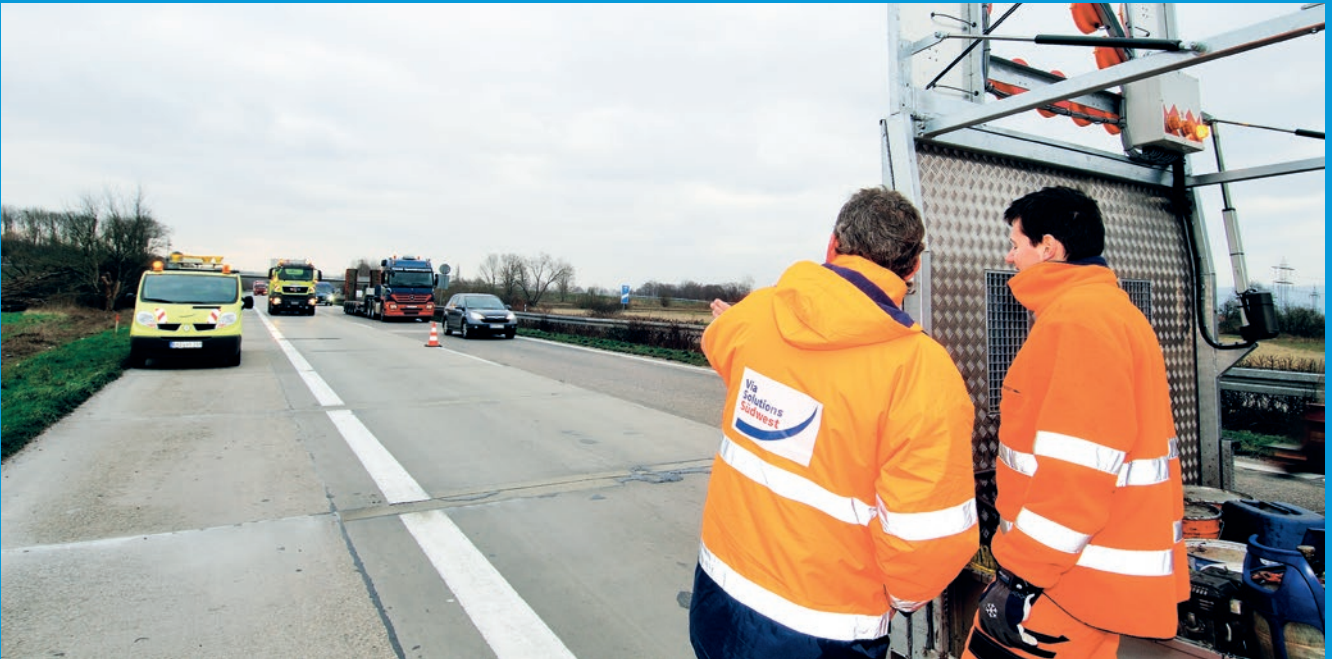
Depending on the country, VINCI Highways can rely on the Group's synergies. In the United Kingdom, VINCI Highways teams with Eurovia subsidiary Ringway to manage the 25-year contracts to upgrade and maintain 821 km of roads and pavements and 767 km of pavement on the Isle of Wight and 415 km of roads and 735 km of pavements in the London Borough of Hounslow. In other countries, such as the United States, projects have been developed in partnership with VINCI Construction Grands Projets. ●



VINCI Highways has formed a partnership with Ringway to manage two road network upgrade and maintenance contracts in the UK, one on the Isle of Wight and the other in the London Borough of Hounslow.

## RELYING ON THE GROUP'S AREAS OF EXPERTISE

VINCI Highways is the leading operator in Germany, a country currently investing in highways, where the company and its partner Eurovia are pursuing their expansion by taking on A-Modell projects.



In Germany, VINCI Highways' three concession companies are responsible for designing, building, renovating (widening), financing, operating and maintaining motorway sections.

For many of the past 26 years since reunification, the German government has focussed on upgrading the road network in the eastern part of the country. It is now turning its attention to the west and is accelerating the road network modernization program with the intention of investing some €15 billion in 11 projects covering over 600 km of roads over the next 30 years.

### The partnership with Eurovia

VINCI Highways and its construction partner Eurovia, a VINCI Group subsidiary and a leading builder of transportation infrastructure, are focusing on A-Modell projects. They have worked together on a 46.5 km section of the A9 and a 45 km toll section of the A4 in Thuringia as well as a 60 km section of the A5 in Baden-Württemberg.

### A win-win proposition

When VINCI Highways is awarded a contract in Germany, the client can count on its support throughout the project, from financing to operation. VINCI Highways can draw on the VINCI Group's full range of expertise to build the infrastructure in half the time it would otherwise take - a win-win proposition for both parties. ●



# CREATING STRONG LOCAL PARTNERSHIPS

Over the past quarter-century, the VINCI Group's subsidiaries in Colombia forged the values that underpin the VINCI Highways – Concreto partnership.

In August 2016, the new VINCI Highways/Concreto consortium won the public private partnership tender issued by the National Infrastructure Agency (ANI) of Colombia to modernize the Via 40 Express. This road, used by 15.3 million vehicles in 2015, is one of the country's busiest.

## Building up to a partnership

The companies were already very familiar with each other. They were able to build on the close ties developed by Concreto and VINCI Construction subsidiary Soletanche Bachy in their joint subsidiary founded 25 years ago, which paved the way for the strategic partnership formed in 2015 between VINCI and Constructora Concreto, Colombia's second-largest construction and real estate development operator.


## Complementary expertise

VINCI Highways and Concreto each brings its expertise to the consortium, so that together they cover the full range of expertise required to win some of Colombia's major infrastructure projects. VINCI's expertise in concessions and contracting complemented Concreto's leadership in the construction and property-development sectors. ●

Building on the strategic partnership established in 2015 by VINCI and Constructora Concreto, the VINCI Highways and Constructora Concreto 50/50 joint venture won the concession for the Bogotá–Girardot freeway in 2016.







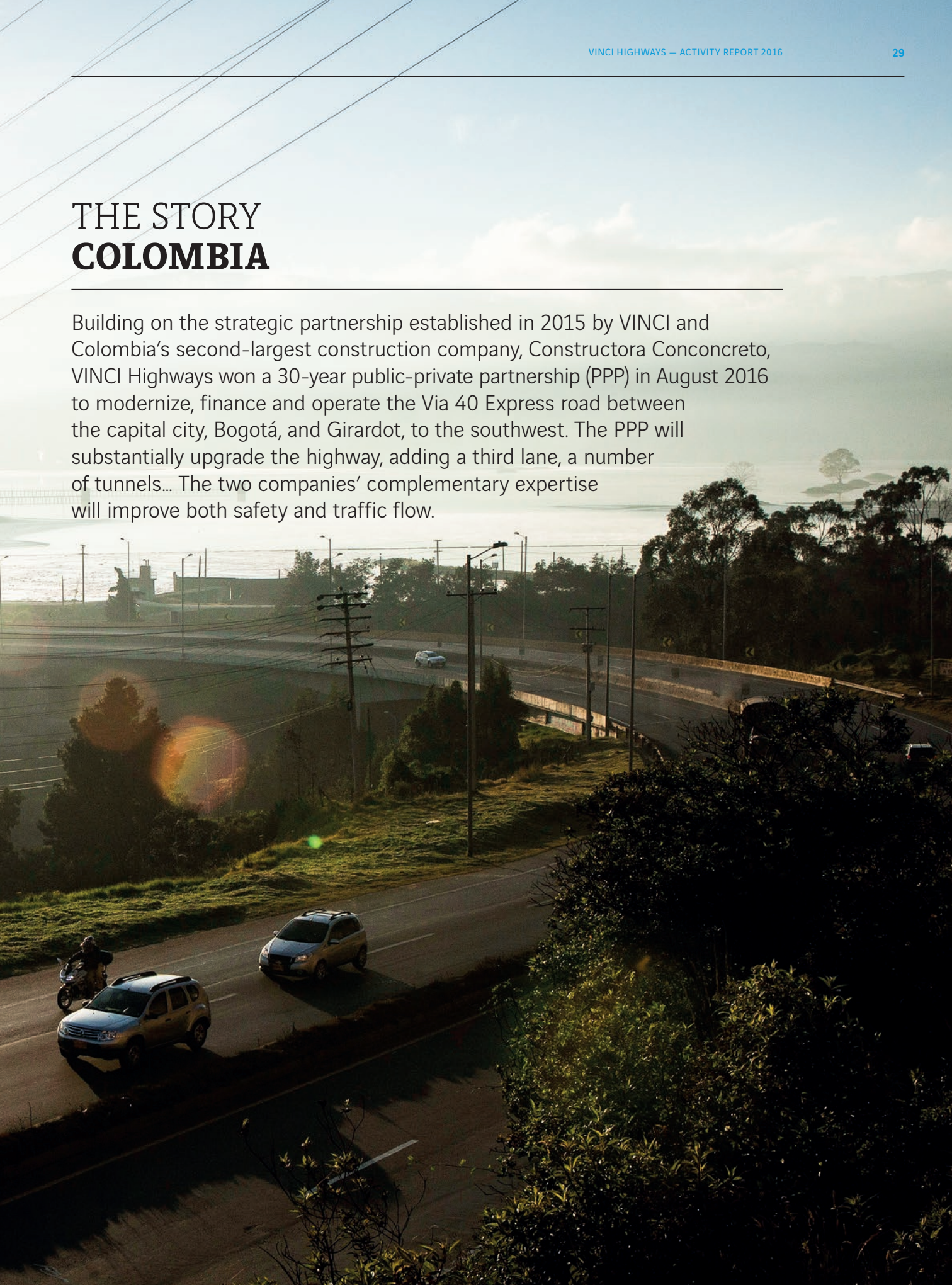
VINCI Highways will upgrade and operate the 141 km toll motorway connecting Bogotá and Girardot and build a third lane over a 65 km section.



# THE STORY COLOMBIA

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Building on the strategic partnership established in 2015 by VINCI and Colombia's second-largest construction company, Constructora Concreto, VINCI Highways won a 30-year public-private partnership (PPP) in August 2016 to modernize, finance and operate the Via 40 Express road between the capital city, Bogotá, and Girardot, to the southwest. The PPP will substantially upgrade the highway, adding a third lane, a number of tunnels... The two companies' complementary expertise will improve both safety and traffic flow.





## INVESTING IN A BRIGHTER FUTURE

The 2x2-lane Via 40 Express is a 50-year old toll road which winds 140 km down through the mountains from Bogotá at 2,500 m altitude to Girardot at 800 m and then a further 382 km to the country's biggest port, Buenaventura, on the Pacific Coast.

The Colombian government wants to accelerate development of the country's road network, which has suffered from a lack of investment over the past 50 years. Modernizing the

busy Via 40 Express (which recorded 16.3 million transactions in 2016), is part of the infrastructure upgrade plans introduced in 2012 with the adoption of the first PPP law, followed by the creation of the 4G Program (Fourth Generation Toll Road Concession Program).

Work on the Via 40 Express will entail adding a third lane in both directions along the first 65 km, rehabilitating a 4.2 km tunnel and building two major intersections, four



Work on the Bogotá–Girardot toll motorway, which includes the construction of four new 2 km long tunnels and refurbishment of an existing 4.2 km long tunnel, will be carried out by VINCI Construction and Constructora Concreto.

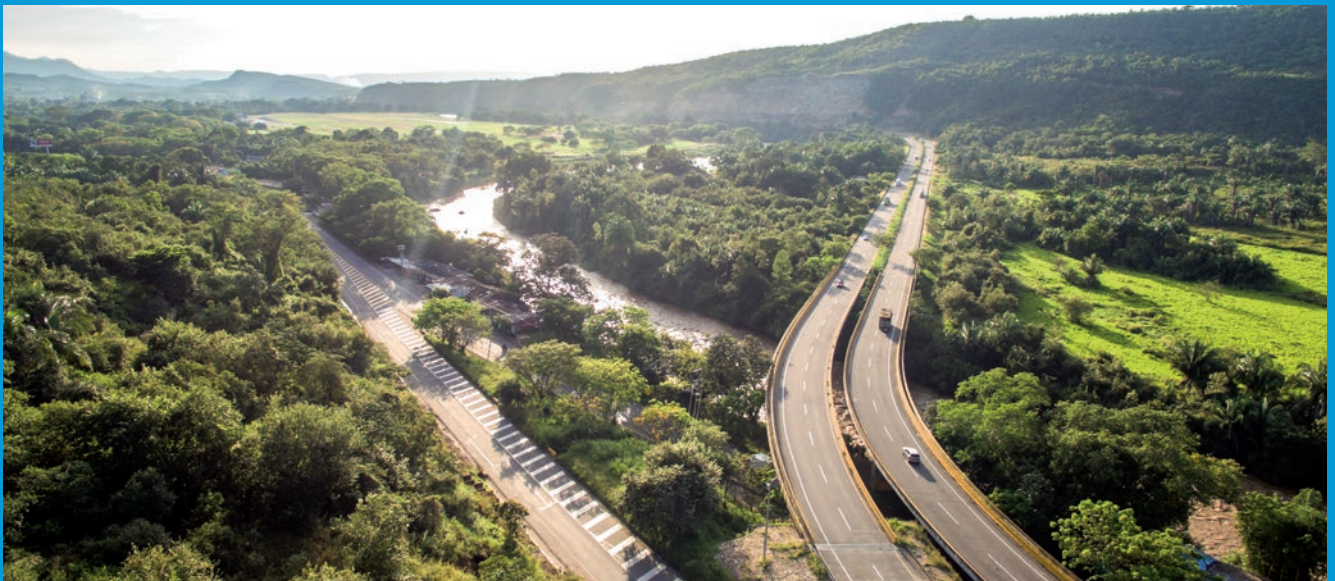
“Construction is estimated to last five years and will be carried out by a 50/50 joint venture comprising VINCI Construction Grands Projets/VINCI Construction Terrassement and Concreto.”

**16.3 million**  
transactions recorded in 2016.

2 km-long tunnels, 17 bridges, 34 pedestrian bridges, four viaducts and two operational centres and operating and maintaining it all for 30 years. The concessionaire's revenue will come from tolls.

Construction is estimated to last five years and will be carried out by a 50/50 joint venture comprising VINCI Construction Grands Projets/VINCI Construction Terrassement and Concreto.

The contract was signed on 18 October 2016. VINCI Highways started operating and maintaining the Via 40 Express on 1 December 2016, having marshalled a full operations team in less than six weeks. ●



The 141 km motorway connecting the capital Bogotá with the city of Girardot, located in the province of Alto Magdalena, is one of the busiest corridors in Colombia.

## TOLLS BECOMING WIDESPREAD

**In order to improve the road network in Colombia, the government started introducing tolls on freeways all over the country. VINCI Highways will be observing how the population responds to the measure. In the case of Via 40 Express, users have become accustomed to the tolls allowing them to use this road, which they feel is a faster, safer option than some of the alternative, free routes. When more roads join the tolled network, interoperability will be introduced to ensure that bad payers' electronic payment tags do not open the barrier on any tolled motorway anywhere in the country. ●**



# Electronic toll collection

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Developing electronic toll collection (ETC) technologies to ensure fast, seamless payments at toll plazas is the responsibility of VINCI Highways' ETC Department. Better services and the elimination of delays at toll plazas not only reduce vehicle emissions, but can also help people stay relaxed and concentrated, and thus be safer drivers.

# ETC: SERVING CONCESSIONAIRES THE WORLD OVER

The ETC Department was founded three years ago to allow VINCI Highways to develop its own toll collection technology. It serves concessionaires the world over.

One of the technologies developed is seamless electronic toll collection. This allows drivers to use the electronic payment tag issued by one concessionaire to pay the toll on every motorway section, regardless of which company operates it. In other words, the concessionaires' tags are interoperable. Drivers move through the gantries without slowing in the free-flow system or slow to about 80 km/h when passing through the toll plaza so the tag can be read.

## Introducing interoperability

After the introduction of the first nationwide interoperable system in France in 2000, VINCI introduced interoperability in Greece. In 2016, Interoperability was introduced in Russia by VINCI Highways on behalf of the Russian Federation's state-run motorway company Avtodor.

## A key for future development

Electronic toll collection allows concessionaires to get to know their clients, and therefore to offer them better user service and promotions. It is also the basis for future developments such as free-flow tolling; tolls adapted to the number of people in the car; and tolls that are proportionate to the kilometers traveled on all roads. These services will play an essential role in encouraging environmentally responsible driving thanks to carpooling. ●



In 2016, electronic toll collection on section 1 of the M11 motorway connecting Moscow and St Petersburg in Russia accounted for about 26% of transactions.

# TOLLPLUS: A KEY ACQUISITION

TollPlus is a benchmark for the implementation and maintenance of ETC solutions and customer relationship management.

“TollPlus is currently rolling out a transaction management system covering 350 motorway toll plazas in India.”

In September 2016, VINCI Highways acquired a strategic interest in TollPlus, bringing a technology specialist into its portfolio.

Based in Phoenix, Arizona and with development teams in Hyderabad, India, TollPlus was created in 2009. Since then, the company has developed the best-in-class systems that are comprehensive, scalable, lightweight, secure, and highly customizable for the automated management of modern toll roads and other mobility

solutions including parking facilities and ferry, metro and other transit operations.

## Modular capabilities

TollPlus provides a modular set of capabilities that support every aspect of toll road operations or large road-user charging systems.

It has built-in capabilities to manage all tolling business processes (financial, customer relationship management, reporting and audit, and of course enforcement) in order to improve the concessionaire's operational efficiency and profitability. ●

1. Pex, which VINCI Highways acquired in December 2016, is the market leader in toll tag distribution in Peru.

2. Toll Collect is a satellite-based truck toll collection network designed to cover the German motorway network.

As part of the contract signed in 2016, it will be further extended to cover 40,000 km of trunk roads starting in 2018.





# FREE-FLOW: OUR TECHNOLOGICAL KNOW-HOW

Free-flow enables tolls to be collected virtually without the need for vehicles to drive through a toll plaza.

**“In 2016, tolls collected on behalf of the German government amounted to €4.6 billion.”**

To pay tolls, drivers usually slow or stop when they pass through a toll booth. With a free-flow toll system, however, like the one VINCI Highways put in place on 91 Express Lanes in Orange County, California, drivers have no such toll obligations on the road. They just drive and pay the bill from home later.

Of the available solutions, Portugal uses DSRC (Dedicated Short Range Communication) where gantries are installed to record a vehicle's identifier, transmitted wirelessly from the tag in its windshield. Germany and Belgium prefer GNSS (Global Navigation Satellite Systems) in which the OBU

registers its positions along a road network. With ANPR, video cameras record the vehicle's number plate. New technologies, such as RFID (Radio Frequency Identification) are also becoming available.

With the 91 Express Lanes and its subsidiary Axxès, more than 300,000 trucks equipped and Toll Collect's 15-year experience, VINCI Highways has built expertise enabling it to implement such systems on existing or new tolling systems.

## A question of legislation

Implementing a free-flow system is not only a question of technology but also of legislation. In California or Germany today, and Colombia and elsewhere tomorrow, VINCI Highways' freeflow system can be implemented because legislation allows the concessionaire to track the registered owner of the vehicle when the toll amount due has not been paid. ●



For the past 20 years, Cofiroute USA has been operating 16 km of express lanes on the SR-91 urban motorway – which was equipped with the world's first free flow toll system. The system was extended to I-15 in 2016.

# IMPROVING SAFETY

Wherever VINCI Highways is present, safety is our priority, for our employees and subcontractors and for road users.

Our management has a responsibility to do its utmost to ensure the physical integrity and health of everyone on our worksites and in the facilities we operate. In 2016, VINCI Highways made progress in cutting the number of accidents both among its own employees and those of its sub-contractors. The lost-time injury rate (lost time injury x 1,000,000/ hours worked) was reduced by 50% from 6.07 in 2015 to 2.91 in 2016. A number of elements are key to ensuring that these encouraging results are maintained.

## Implementing new best practices

These include requiring both VINCI Highways' employees, its contractors and their subcontractors to implement at least 10 out of 16 non-negotiable best practices regarding health and safety. The aim is to raise awareness of dangerous

practices amongst employees and subcontractors rather than to assign blame. The rules, slightly different for construction activities and for operation activities, can be adapted specifically for a particular project or phase and also modified for a country. They might include mandatory personal protective equipment, prohibiting the possession or consumption of alcohol or drugs during the working day, respecting traffic laws and policies (no cell or hands-free phone used whilst operating vehicles and/or mechanical equipment), using the right tools for the task, being trained and certified for the use of each power tool and so on.

## The German example

In Germany, a risk analysis is undertaken for every job a road worker may have to undertake. A simple card is printed outlining the main dangers of each task. Prior to a job, the supervisor gives each team member their relevant task card and briefs them. The briefing is recorded on a smartphone and sent to the team leader. Then there is a minute's silence so each person can reflect on what they've just heard. Once the job is done, there is a one minute recorded feed-back on what went right and what, if anything, went wrong. In addition, every VINCI Highways employee in Germany can receive a cash incentive for submitting a suggestion which is evaluated according to whether it improves safety, leads to cost savings, optimizes processes or introduces and innovation. In 2016, 11 employees submitted 20 proposals. ●



"Our aim is to raise awareness of dangerous practices amongst our employees and subcontractors rather than assign blame."





The health and safety policy applies to all people at VINCI worksites and infrastructure operations: employees, temporary staff, subcontractors' employees and the end customers of managed infrastructure.



# HUMAN RESOURCES: ON THE MOVE!

The VINCI Highways human resources policy supports our teams, anticipates their needs and fosters mobility across our network.



VINCI Highways developed its network of highways and road infrastructure outside France by winning new concessions in Germany, Russia, the United States, Canada and then, in 2016, in Colombia and Peru.

## Mobility and agility

As VINCI Highways has steadily won new concessions in Germany, Russia, the United States, Canada, Colombia and Peru, our human resources policy has adapted to our expanding range of countries, partners and project life cycles and encouraged mobility across them, with a dual goal: to offer employees broader career prospects and to meet operational needs.

## A network of experts

To successfully finance, develop, build, operate and maintain the projects entrusted to us, VINCI Highways has put together a network of experts with extensive experience working on the projects in our asset portfolio. We can deploy a team drawn from this network in record time. For example, in Colombia, in less than 6 weeks, we mobilized a dedicated O&M team locally to start operations of the road on December the 1st.

## Integration and experience sharing

We constantly broaden our range of expertise and our network by forming partnerships with local companies and integrating the employees of the new concessions we acquire. When VINCI Highways took on concessions for major motorway projects in Colombia and Peru in 2016, we prioritized the integration of more than 750 employees. We help local teams gain familiarity with the VINCI Highways culture. ●

“We constantly broaden our range of expertise and our network by forming partnerships with local companies.”

# BUILDING SUSTAINABLY

Major infrastructure not only serves as a tool for economic development but it also has a positive long-term environmental and visual impact.

In December 2016, the Ohio River Bridge–East End Crossing project between Indiana and Kentucky won the Institute for Sustainable Infrastructure (ISI) Envision Platinum award, one of the highest value transportation projects to do so. The award proved that this major infrastructure successfully meets mobility challenges, stimulating the region's economy while addressing environmental and visual concerns.

## Accounting for climate change

Heat waves and flooding were identified as among the most significant climate-change-related risks. The project company WVB East End Partners (owned by VINCI Highways) consequently took into account the possibility of a 100-year flood event for the retaining walls and motorway bridges, and a 500-year flood event for the tunnel, roadway, and

cable-stayed bridge. Hazards such as fires, earthquakes, and accidents were also addressed.

## Satisfying local concerns

Specific requirements were incorporated into the project to ensure local skills and capabilities were developed, and that disadvantaged business enterprises could contribute to the project's design and implementation. Stakeholder feedback also induced changes, including the incorporation of noise barriers, decorative fencing, lighting and pedestrian railings to preserve the area's historical elements. ●



The new 12 km motorway between Indiana and Kentucky in the United States, built under a PPP arrangement, will be operated by VINCI Highways until 2051.

# VINCI HIGHWAYS' PORTFOLIO

Infrastructure	Description	Concession Company	Share capital held	Operator	Share capital held	End of contract
<b>FRANCE</b>						
Prado Carenage Tunnel	2.5 km urban toll tunnel in Marseille	SMTPC	33%	SMTPC	33%	2025
Prado Sud Tunnel	1.5 km urban toll tunnel in Marseille, with two one-way traffic levels	SPS	59%	SMTPC	33%	2055
<b>GERMANY</b>						
A-Modell A4 motorway	45 km section of motorway, with satellite-based ETC for heavy vehicles, between Gotha and Eisenach in Thuringia	Via Solution Thüringen	50%	Via Solution Thüringen	50%	2037
A-Modell A5 motorway	60 km section of motorway, with satellite-based ETC for heavy vehicles, between Offenburg and Karlsruhe in Baden-Württemberg	Via Solution Sudwest	54%	Via Solution Sudwest	54%	2039
A-Modell A9 motorway	47 km section of motorway, with satellite-based ETC for heavy vehicles, between Triptis and Schleiz in Thuringia	Via Gateway Thüringen	50%	Via Gateway Thüringen	50%	2031
Toll Collect <sup>(1)</sup>	Launched in 2005, Toll Collect was the first satellite-based road and motorway toll system for heavy vehicles		10%			2018
<b>CANADA</b>						
Regina Bypass	61 km motorway bypassing Regina, the capital of Saskatchewan	Regina Bypass Partners	38%	SCH Maintenance Services Ltd	50%	2049
Fredericton-Moncton highway	195 km section of motorway between Fredericton and Moncton in New Brunswick	MRDC Operations Corporation	25%	MRDC Operations Corporation	25%	2028
Confederation Bridge	12.9 km bridge between Prince Edward Island and New Brunswick	Strait Crossing Development Inc. (SCDI)	20%	Strait Crossing Bridge Limited (SCBL)	20%	2032
<b>COLOMBIA</b>						
Bogotá-Girardot motorway	141 km toll motorway between Bogotá and Girardot, with construction of a third lane over 65 km	Via 40 Express	50%	Via 40 Express		2042
<b>UNITED STATES AND INDIA</b>						
TollPlus <sup>(1)</sup>	TollPlus, located in Phoenix (Arizona) and with operations in Hyderabad (India), specialises in the development, implementation and maintenance of digital solutions for ETC and customer relationship management		30%			
<b>UNITED STATES</b>						
Ohio East End Crossing	12 km motorway between Indiana and Kentucky, including the new 4-lane, cable-stayed toll bridge (762 metres) and a twin-tube tunnel (512 metres)	WVB East End Partners, LLC	33%	WVB East End Partners, LLC		2051
Cofiroute USA	Contracts for operation, maintenance and system integration, as well as consulting in the field of traffic management and free-flow systems	Cofiroute USA	100%			
91 Express Lanes	16 km of motorway down the middle of Riverside Freeway (SR-91) in Orange County (California) A third lane is provided in each direction at the toll plaza to identify high-occupancy vehicles	Cofiroute USA	100%	Cofiroute USA	100%	2021
<b>GREECE</b>						
Athens-Corinth-Patras motorway	201 km toll motorway between Elefsina (Corinth) and Patras	Olympia Odos	30%	Olympia Odos Operation	30%	2038
Maliakos-Kleidi motorway	230 km toll section (Maliakos to Kleidi) of the motorway between Athens and Thessalonika	Aegean Motorway	14%	Aegean Motorway		2038
Charilaos Trikoupi Bridge	2,880 metre cable-stayed toll bridge linking the Peloponnese to the mainland	Gefyra	57%	Gefyra Litourgia	55%	2039



Infrastructure	Description	Concession Company	Share capital held	Operator	Share capital held	End of contract
<b>JAMAICA</b>						
Highway 2000 East-West	50 km toll motorway divided into two sections and created to alleviate traffic congestion at the entrance to the capital, Kingston	Transjamaican Highway	13%	Jamaican Infrastructure Operator	51%	2036
<b>PERU</b>						
Línea Amarilla expressway	25 km toll expressway in the center of Lima	LAMSAC	100%	LAMSAC	100%	2049
Pex <sup>(1)</sup>	Operator of the ETC system associated with the Línea Amarilla expressway in Lima		100%			
<b>PORTUGAL</b>						
Bridges over the Tagus	Two toll bridges in Lisbon: the 2.25 km 25 April Bridge and the 17.2 km Vasco da Gama cable-stayed bridge (12.3 km over the Tagus), equipped with viaducts	Lusoponte	37%	Lusoponte	37%	2030
<b>UNITED KINGDOM</b>						
Severn Crossings	Two toll bridges over the Severn between Bristol (England) and Cardiff (Wales)	Severn River Crossing plc	35%	Severn River Crossing Plc and Cofiroute UK	100%	2018
Newport Southern Distributor Road	Reconstruction and widening of a 10 km section of urban highway, with the construction of a steel bowstring arch bridge	Morgan VINCI Limited	50%	Ringway (Eurovia)		2042
Isle of Wight road network	Upgrade and maintenance of the Isle of Wight's road network, totalling 821 km of roads, 767 km of pavements and over 12,000 street lights	Island Roads Services	50%	Ringway Island Roads (Eurovia)		2038
London Borough of Hounslow road network	Upgrade and maintenance of the London Borough of Hounslow's road network, totalling 415 km of roads, 735 km of pavements and over 16,000 street lights	Hounslow Highway Services	50%	Ringway Hounslow Highways Limited (Eurovia)		2037
<b>RUSSIA</b>						
Section 1 of the M11 motorway between Moscow and St Petersburg	43 km toll motorway, the first part of which runs between the Moscow ring road and the city's Sheremetyevo International Airport	North West Concession Company (NWCC)	50%	UTS	50%	2040
Sections 7 & 8 of the M11 motorway between Moscow and St Petersburg	138 km of four- or six-lane toll motorway, starting from St Petersburg	Two Capitals Highway (TCH)	40%			2041
United Toll System <sup>(1)</sup>	UTS is the Russian leader in motorway operation and toll management, operating on a total of 526 km of motorway		50%			
<b>SLOVAKIA</b>						
R1 (PR1BINA) expressway	The 41 km PR1BINA expressway, located between Nitra and Tekovské Nemce, to the east of Bratislava, as well as the 5.5 km Banská Bystrica northern ring road	Granvia	50%	Granvia Operation	100%	2041

(1) Electronic toll collection (ETC) Department.

**Design and production:** PUBLICORP – 14625.

**Photo credits:** Denis Lambert, C. Meireis/Capapictures, A. Detienne/Capapictures, Oscar Triana Bocanegra, Kostas Mitropoulos, M. Simola/Capapictures, Cyrille Dupont, Berthold Litjes, S. Gratchev/Capapictures, Espinel&Caicedo Photography, Francis Vigouroux, Spencer Griffiths, Axel Heise, Thomas Chaves/Capapictures, Photothèque Cofiroute, VINCI and subsidiaries photo library, all rights reserved.

**Printing:** Arteprint. Printing with vegetable inks on PEFC certified paper.



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