CASE STUDY

Powering the Netherlands' First Free-Flow Tolling System

September 2026

emovis
Abertis Mobility Services

The Economic Impact **of the A24**

The A24, also known as the Blankenburg Connection, is one of the Netherlands' most significant transportation infrastructure projects. Situated within one of the busiest logistics corridors in Europe, the 11-kilometer, three-lane highway establishes a vital link between the A15 near Europoort directly to the A20 in Vlaardingen.

This integral route serves as the transportation conduit for logistics providers and commuters alike, while ensuring the entire region remains accessible, efficient, and has the capacity to withstand future growth.

The A24 includes a ground-level, subsurface tunnel incorporating the Holland Tunnel, the Maasdelta Tunnel, and multiple interchanges that integrate directly with the surrounding motorway network. Together, these road systems form a new north-south mobility corridor beneath the Nieuwe Waterweg estuary, intended to relieve congestion while improving access to the Port of Rotterdam and surrounding industrial zones.

This corridor sits at the intersection of multiple European transportation routes, accommodating a constant flow of passenger and freight vehicles registered across numerous countries.

This multi-jurisdictional traffic makes the A24 one of the most operationally complex, free-flow tolling environments in Europe, requiring the system to accurately recognize, validate, and process vehicle registrations spanning a wide range of international jurisdictions simultaneously.

Multi-jurisdictional traffic makes the A24 one of the most **operationally complex, free-flow tolling environments in Europe.**

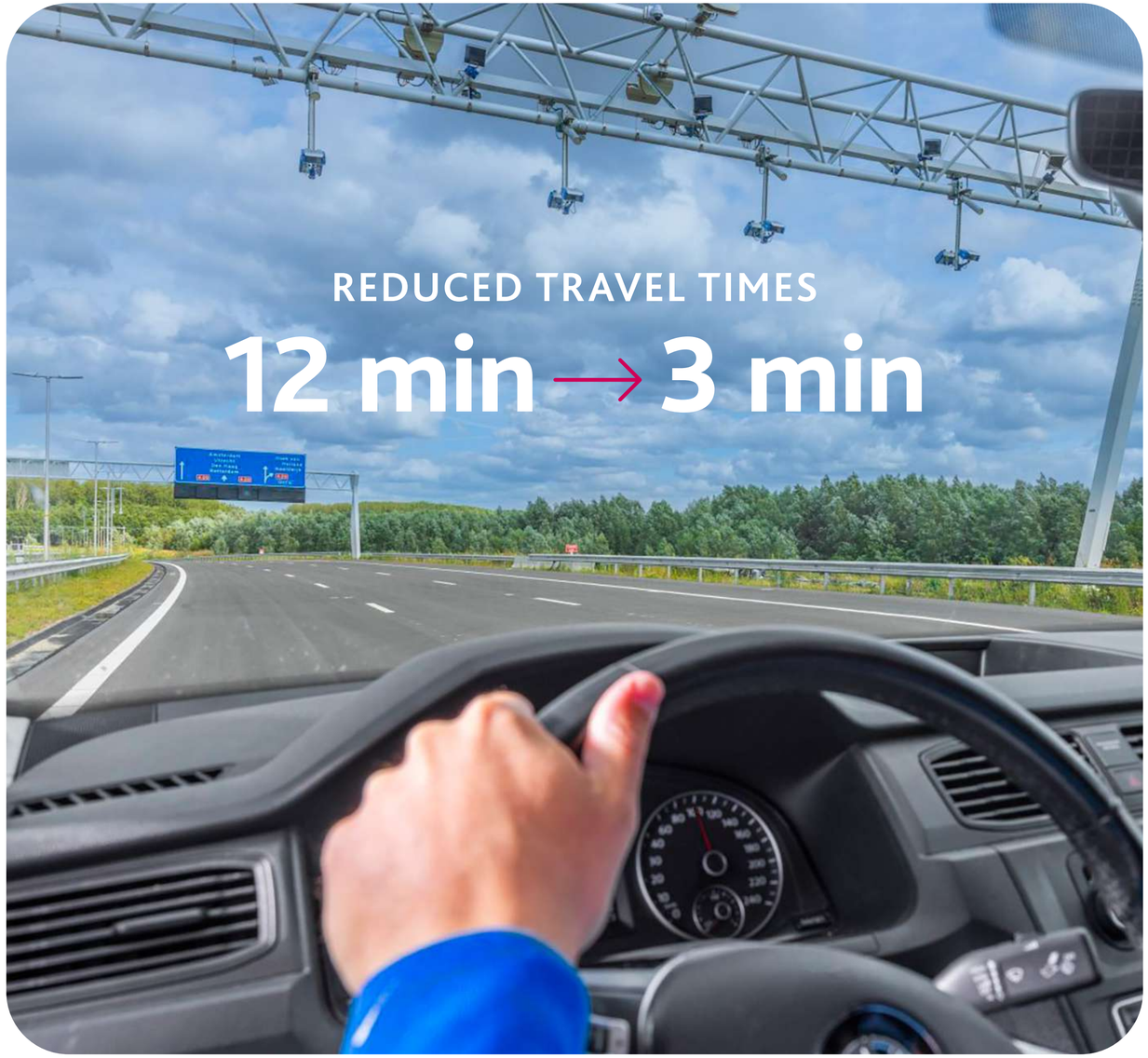
As one of Europe's largest logistics hubs, Rotterdam plays a vital role in international freight movement, handling well over 470 million tons of cargo annually. **The A24 was developed to support this growing transportation demand while improving traffic flow and connectivity, reducing journey times from approximately 12 minutes to as few as 3 minutes** following its opening on December 7, 2024.

From an economic perspective, the A24's ability to reduce travel times delivers measurable benefits across the region by enabling:

Faster deliveries: Shorter routes translate into quicker turnaround times

Lower operating costs: Reduced travel time decreases fuel consumption and transportation expenses

More resilient supply chains: Improved route reliability helps optimize logistics operations and resource utilization

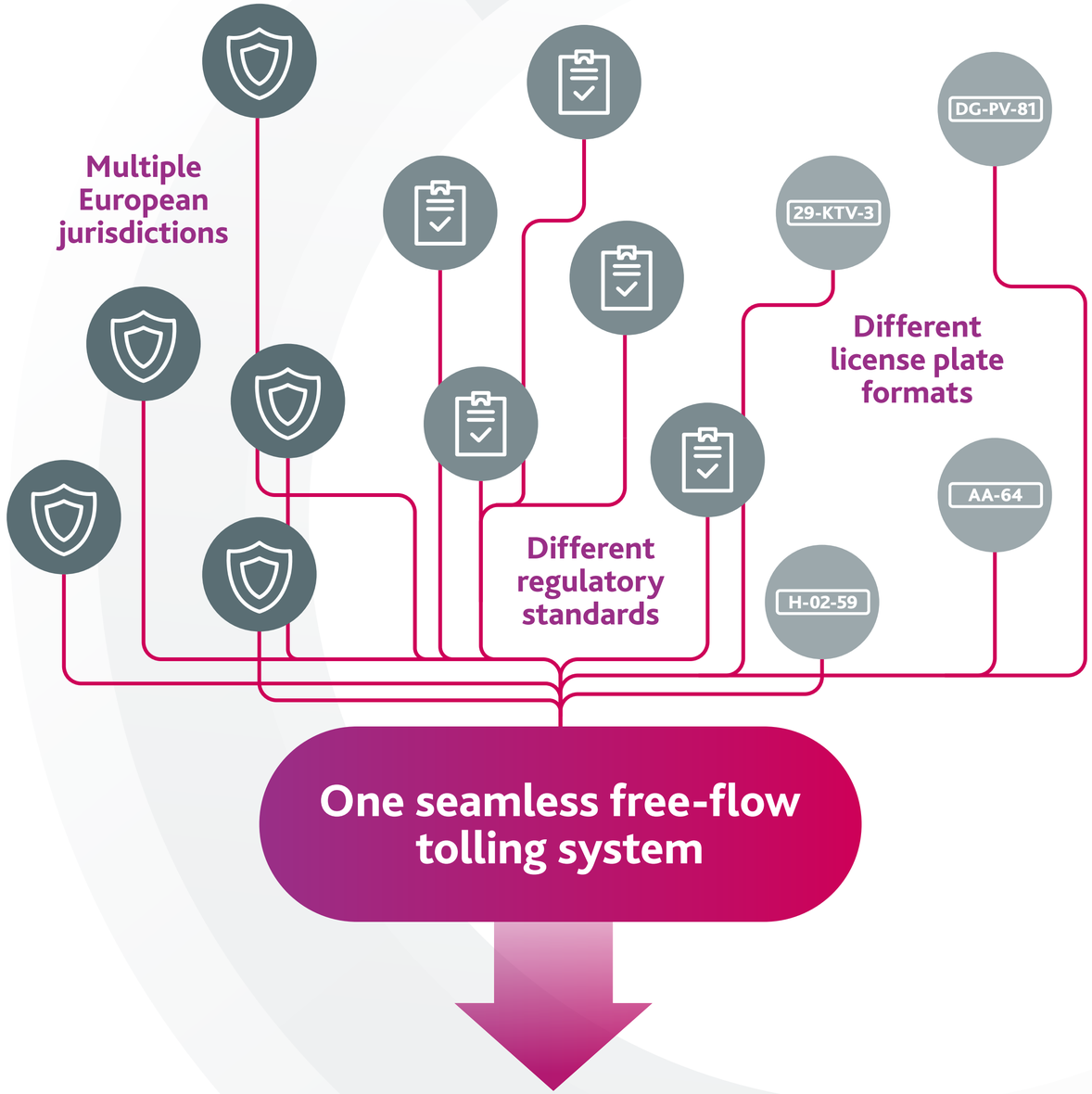


1 THE CHALLENGE

Delivering Accurate **Tolling Across Multiple European Jurisdictions**

Located at the heart of Europe's transportation network, the Netherlands' central position created a highly complex tolling environment, with a significant volume of passenger and freight traffic traveling between countries daily. As a result, the complexity of the project extended far beyond introducing a new digitally managed road usage charging model; rather, it involved implementing a system capable of operating accurately across one of Europe's most jurisdictionally diverse transportation corridors.

Specifically, the A24 corridor had to accommodate vehicles registered across a variety of countries, each with its own license plate formats, registration standards, and regulatory requirements. The system must reliably manage vehicle registrations from across Europe while maintaining high levels of automation, transaction accuracy, and enforcement readiness. Achieving this level of performance is far more demanding than operating within a single-jurisdiction tolling environment.



1 THE CHALLENGE

In this environment, recognition and validation performance metrics are significantly more complex. Success depends not only on accurately reading a license plate, but also on the ability to correctly identify, validate, and process vehicle information across a diverse range of European jurisdictions instantaneously.

Simultaneously, in order to **support approximately 50,000 vehicles per day** while preserving uninterrupted traffic flow, the project required the establishment of an entirely new tolling ecosystem for the Netherlands, including roadside infrastructure, transaction processing, enforcement workflows, and stakeholder coordination.

Success depends not only on accurately reading a license plate, but also on the ability to correctly identify, validate, and process vehicle information across a diverse range of European jurisdictions instantaneously.

Enabling Multi-Jurisdiction Tolling

Emovis delivered a fully integrated free-flow tolling architecture designed to accurately recognize, validate, and process transactions across different jurisdictions to support the operation of the A24 corridor.

At the roadside, **Emovis Identify** uses advanced ANPR technology to detect vehicles and capture license plate information in real time, generating tolling events as vehicles pass through the corridor at highway speeds, regardless of country of origin.

Captured data is then processed through **Emovis Qualify**, the operational back-office platform responsible for validating vehicle passages, enriching transaction data, and translating detections into billable toll transactions. Hosted in a cloud-based environment, the platform provides scalable transaction management and applies jurisdiction-specific processing rules while supporting the performance and reliability requirements of a national free-flow tolling program.

To address the complex challenges associated with multi-jurisdictional traffic and diverse registration formats, **Emovis Verify** provides Manual Image Review (MIR) capabilities for complex or low-confidence transactions.
This validation layer supports accurate processing of non-standard, personalized, and cross-border vehicle registrations while maintaining high levels of automation across the network.

Together, these solutions create an integrated tolling architecture capable of accurately processing transactions across multiple jurisdictions while supporting revenue assurance, enforcement readiness, and operational efficiency.

3 THE IMPACT

Since launching in December 2024, the A24 tolling system has demonstrated strong operational performance, **successfully processing millions of transactions to-date across a diverse range of countries.**

Over a twelve-month period, **more than 12.1 million vehicle passage records were processed** across a highly diverse mix of domestic and international vehicle registrations, including over 11.3 million passenger vehicle transactions and more than 800,000 heavy vehicle transactions.

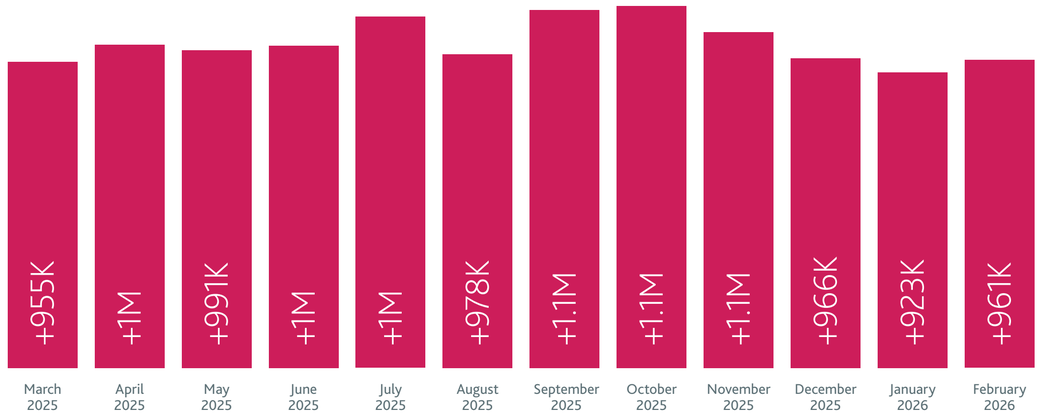
TOP 5 COUNTRIES BY TRAFFIC VOLUME

#1	Netherlands
#2	Germany
#3	Poland
#4	Belgium
#5	Romania

TRAFFIC EVOLUTION

Total VPR (TSVB) Transactions Reviewed Over a One-Year Period:

12,168,553



3 THE IMPACT

Operational performance remained consistently high, achieving:

100% system availability

100% vehicle detection

Recognition rates approaching **99.9%**

The platform also delivered exceptional levels of automation despite the complexity of processing vehicles from multiple European jurisdictions.

Key operational results included:

96.3% of transactions qualified automatically

99.3% of automated transactions processed in less than 60 seconds

Only **3.7%** of transactions required Manual Image Review

MANUAL IMAGE REVIEW TIMELINE

Of the transactions requiring manual validation:

DAY 1

97.9%

were processed within one day

DAY 2

99.4%

were completed within two days

DAY 3

NEARLY 100%

were resolved within three days

A24

The A24 Blankenburg Connection represents a landmark achievement for both Dutch transportation infrastructure and modern tolling operations. **Not only does the project serve as the Netherlands' first free-flow tolling deployment, but it also successfully demonstrates how a fully digital tolling model can operate within one of Europe's most demanding multi-jurisdiction tolling environments.**

By combining advanced roadside technology, intelligent transaction processing, and targeted human validation, Emovis played a critical role in delivering a scalable tolling system capable of accurately processing millions of transactions spanning multiple European jurisdictions while still maintaining industry-leading operational performance.

This project singlehandedly serves as the ultimate proof point for how free-flow tolling systems can be implemented to withstand jurisdictional complexity.

PROVEN PERFORMANCE

- Netherlands' first free-flow tolling deployment
- One of Europe's most complex multi-jurisdiction environments
- 12.1 million+ transactions processed
- Industry-leading automation and recognition

emovis
Abertis Mobility Services

Emovis is a global expert in toll-based mobility solutions. With over 850 experts worldwide and more than four decades of experience, we partner with transportation operators and agencies to deliver cutting-edge tolling solutions that span the entire mobility value chain, facilitating billions of transactions annually and driving revenue growth for clients worldwide.

For more information, visit **emovis.com**