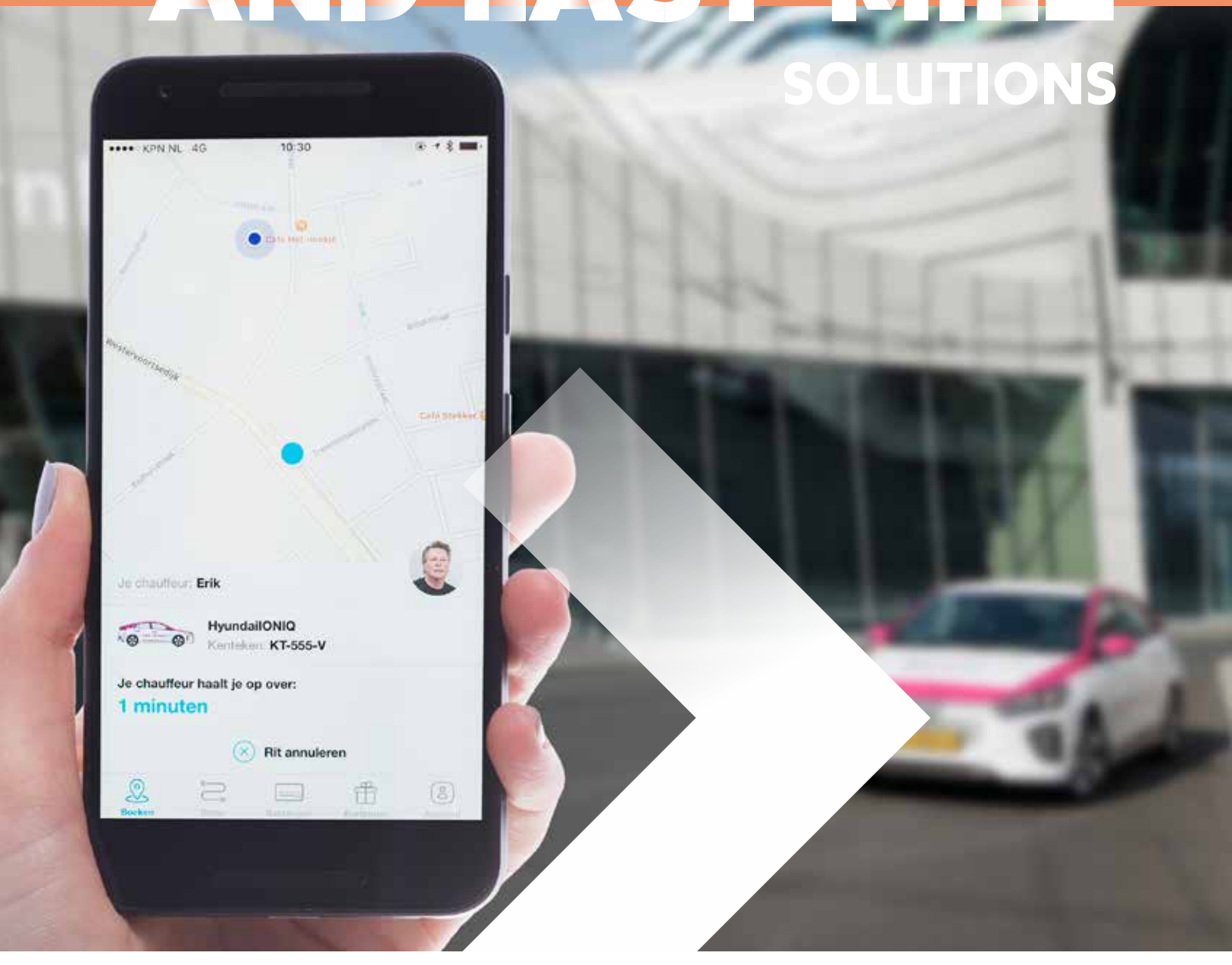
transdev
the mobility company

Portfolio of expertise

FIRST- AND LAST-MILE SOLUTIONS



Connecting new lines, together.

Drawing from our long experience as a multimodal operator, we look forward to assisting you with the construction and optimization of your mobility systems and services.

Our ambition is to develop with you, in a genuine spirit of partnership, customized, safe, effective and responsible transit solutions that are adapted to your needs and constraints and closely in tune with customer expectations.

The mobility of the future will be personalized, autonomous, connected and electric. This is our firm belief. Innovation is at the heart of our approach, in order to constantly improve the performance of public transportation services and make the promise of “new mobilities” a reality, for everyone.

As well as uncompromising safety, which is our credo, our overriding concern is the satisfaction of our customers and the quality of their experience. Every team member in the Group engages on a daily basis to meet these challenges and implement solutions both for today and for the future...»

Thierry Mallet
Chairman & Chief Executive Officer

Connecting the Dots: A new age for first- and last-mile transportation

Traditional public transit—bus, light rail, and metro—works best in dense downtowns and inner suburbs. Until now, those networks have often left large gaps as they move to lower-density neighborhoods, forcing passengers to use their own vehicles or walk long distances for the "first and last mile"—the distance between their origins or destinations and transit stops.

First- and last-mile gaps mean poor service and access. Research in the US shows that needing to walk more than 0.8 kilometers (0.5 miles) to the nearest transit stop reduces trips by around 90 percent.1 Traditionally, this has put transit agencies in a conundrum: either expand fixed-route bus lines at high costs and with low frequencies, or tolerate poor services for low-density areas.

Power to the passengers

In the past, riding transit often meant you had to accept whenever the bus or train came along (or didn't). That has changed.

Passengers can now choose the vehicle that's right for them, just when they need it, with their smartphones. Combined with a new willingness to share just about everything—from houses to bicycles—this has led to an explosion in ways to get around. Shared, on-demand vehicles are the foundation for new opportunities in closing the first- and last-mile gap.

It starts with shared rides in cars or vans, together known as micro-transit. Vehicle capacities range from 4 to 15 passengers or more. Because they are smaller than buses, cars and vans can run at a higher frequency while reducing costs—delivering convenience for passengers and savings for the public. As technology improves, new mid-size autonomous vehicles are also beginning to establish themselves as options for the first and last mile.

New car sharing services are playing a role as well. Many systems allow users to pick up a car where they need it, and drive it to their destination, leaving it there for the next customer. Finally, bike sharing is well suited for connecting passengers to transit stops. Globally, hundreds of cities now have bike sharing systems, and hundreds of millions of people use shared bikes every year.

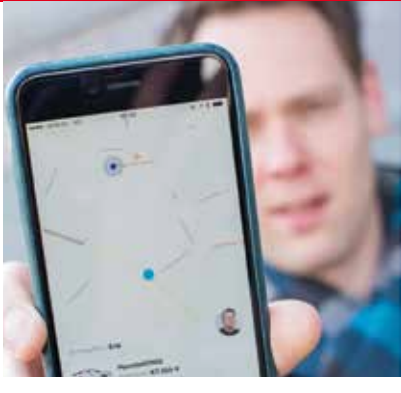
Together, these solutions give cities powerful new mobility tools that are well targeted to the first and last mile. There's no one-size fits all. Rather, a well-designed solution must respect local wants and needs, melding with the city's infrastructure and respecting differences in weather and geography.

Transdev has expertise in all these modes, and in integrating them with traditional public transit

Transdev operates more transportation modes (from buses to bikesharing) and services (from call centers to technology platforms hubs) in more countries (20 countries) than any other company in the world. Our operations span from dense urban areas to rural communities, and everything in between. This combination of expertise makes us extremely well positioned for first- and last-mile innovation. We know how to develop these services that solve headaches for passengers and budget crunches for cities.

1- Bouton, S., et al (2017). «Public-Private Collaborations for Transforming Urban Mobility», McKinsey Insights Report, McKinsey Company, available at www.mckinsey.com.

Good reasons to choose **Transdev**



1 Integrated with transit

Seamless transitions between modes

As an integrated, multi-modal transportation provider, we have a role in service planning and scheduling for cities on five continents. We've studied deeply first- and last-mile solutions for the systems we manage. In Avignon, France, our Popcar carpooling platform runs two routes that bring passengers to the most common transit stops, as well as to job centers (with more than 300 businesses) not served by transit.

2 The right fit

Vehicles of all shapes and sizes

We have designed and operated systems for carpooling, bikesharing, carsharing, and micro-transit. Our micro-transit systems use everything from standard four-door cars, to 15-passenger vans, to various types of autonomous vehicles. Our international reach and experience means that every local Transdev team is backed up by truly global expertise, regardless of the vehicle type. In Tampa, Florida, our first- and last-mile solution, HyperLINK takes people to and from key bus stops in a three-mile radius.

3 Tailored to you

Bringing it all together for the best local service

There's an explosion of new options for first- and last-mile travel, so it's sometimes difficult to know the best technology and where to deploy it. Transdev can help develop a solution that fits with your community, balancing convenience, cost, and user experience. We designed our two first- and last-mile pilots in Sydney, Australia, specifically for two neighborhoods: one brings passengers to and from the local ferry terminal—the other serves shopping centers as well as transit stops.

4 Accessible

Solutions for passengers in wheelchairs and without smartphones

Transdev is committed to providing top-notch service to all our passengers. Many of our solutions provide equal service to passengers in wheelchairs or without smartphones. For example, our HyperLINK in Tampa, focuses on providing shared rides to and from bus stops. The service is fully wheelchair accessible, and we offer booking choices that work for everyone: use our tailor-made app or call in and reserve a ride by phone.

5 Autonomous expertise

The cutting edge of self-driving technology

Autonomous vehicles (AVs) are ideal for first- and last-mile deployments. They can operate all day and are well-suited for short-range loops, including in mixed traffic with other vehicles. And this is how PTAs see things too; In 2018, after having been surveyed by Transdev on their priorities in 5 countries, Transit Authorities have ranked AVs as THE first- and last-mile solution: 61% in Australia and New Zealand, 52% in the US and 43% in Canada.

6 World-class software

Proprietary and customized technology

Our teams have developed best-in-class options for all elements of a modern first- and last-mile technology solution: from the app skins that the user sees to the dispatch software that ensures vehicles arrive on time. With Transdev, our flexibility means you're not locked in. Rather, our three Tech Centers in France, the United States, and the Netherlands work closely together to deliver the right technology for your city.

7 Own your data

The knowledge and analysis you need

At Transdev, we want cities to build successful mobility networks, and every piece of data is a powerful tool. That's why we're happy to let you own all the data we collect—your success is our success. For Toronto, Canada, we built the Triplinx app, which integrates real-time information and planning for 12 transit agencies. Triplinx integrates first- and last-mile transportation, such as bikesharing, and the transit agencies own all the data.

8 Intuitive experience

Ticketing and real-time information on appealing apps

Technology should make things easy. Our apps are appealing and intuitive, allow booking and payment, give updated account information, and provide real-time vehicle locations. Together, this means an integrated digital experience for the passenger. In the United States, Australia, and the Netherlands, users rate our first- and last-mile apps 4.85/5 or better.

Here Today, Better Tomorrow
Autonomous transportation services for the First and Last Mile

Pioneer in operating shared autonomous mobility services

Transdev has operated autonomous transportation services for the first and last mile since 2005, when we pioneered Rotterdam's groundbreaking ParkShuttle. These first-generation AVs operate on fixed paths in their own designated roadways. However autonomous technology has come a long way since then, and Transdev has stayed at the cutting edge. We are now among the world's largest operators of AVs in commercial service.
Around the world, Transdev carries more than 3,000 passengers in AVs every day, and we've moved over 2 million passengers since 2005. Our experience has shown autonomous transportation services are particularly well-suited to closing the first and last mile gap, especially between a station or a stop and a business center, a campus or a business park. This was the case in Rungis, as part of the first commercial contract for an autonomous shuttles service on open roads in Europe. A service was set up to allow employees of the Icade Orly-Rungis business park to reach the different institutional catering places within the park.

Global partnerships

We know the value of having the right partners, especially in a rapidly developing field. That's why we've teamed up with the world's most important technology companies and research institutes. For example, we have partnered with the Renault-Nissan-Mitsubishi Alliance, the world's leading light vehicles manufacturer, a pioneer in electric vehicles.
These partnerships are already bearing fruit, and delivering value for our clients. In France, the «Rouen Normandy Autonomous Lab» project, composed of six public and private partners and coordinated by Transdev, is Europe's first on-demand, autonomous mobility service, using a fleet of 5 autonomous electric vehicles: 4 Renault ZOE vehicles and 1 Lohr i-Cristal shuttle. The objective is to offer autonomous transportation service in an urban area, allowing travelers to reach their destination in the 'Technopole du Madrillet' district or to join the tram station from this area during the day. passengers can book their trips directly via an application.

The Right vehicles for your city

More than any other company, Transdev is deeply familiar with the full range of AVs, as we are the only transit operator to deploy AVs from more than three vendors and propose a multi-manufacturer positioning. Together with the manufacturing company Lohr, we are developing our own autonomous electric vehicle for launch by the end of 2018: the i-Cristal. We are adding our expertise in autonomous operations to Lohr's experience designing and manufacturing electric vehicles. The result is a new type of autonomous vehicle fully accessible and designed for a shared ride. Transdev's global experience means that we know the ins and outs of every AV, and can deliver and operate the one that will work best for your city.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As an operator and global integrator of mobility, **Transdev gives people the freedom to move whenever and however they choose.**

We are proud to provide 11 million passenger trips everyday thanks to efficient, easy to use and environmentally-friendly transportation services that connect people and communities.
Our approach is rooted in long-term partnerships with businesses and public authorities, and in the relentless pursuit of the safest and most innovative mobility solutions.

We are a team of people serving people, and mobility is what we do.

We are The mobility company.

08/2018 - Photos: Photothèque Transdev – Creation: Lonsdale – Realisation: AS Multimedia

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GROUPE
Caisse des Dépôts

Group Client Department
www.transdev.com

Sydney (Australia)

"ON-DEMAND" TRANSPORT Pilots fostering shared, demand-responsive services

Contract facts

TRANSIT AUTHORITY
Transport for New South Wales

OPERATOR
Transdev

CONTRACT START
November 2017

CONTRACT DURATION
Pilots to be reviewed every six months and extended up to two years

Key figures

NETWORK
2 Pilots:
› Manly: point-to-hub service
Two zones
› Sutherland Shire:
point-to-point service
Four zones

VEHICLES
10 Mercedes Sprinter shuttles

STAFF
33 employees, including 30 drivers

BOOKING OPTIONS
App and website, or by phone through our call-in center

Context

In 2016, Transport for New South Wales (TfNSW) published its Future Transport Technology Roadmap, a five-pillar strategy aiming to place NSW at the forefront of adopting new technologies and new transportation models. In 2017, as part of the "Foster shared, demand-responsive services" pillar, TfNSW awarded contracts to private operators for eight pilot projects for on-demand transportation across the Sydney region. The pilots are being assessed every six months and renewed or adjusted depending on their success, enabling TfNSW to measure customer interest for this new form of transportation.

Objectives

› Understand the scope and ability of new transportation models to deliver improved customer outcomes and operating efficiency.
› Guarantee seamless mobilization and start of operations within a short timeframe.
› Provide customers with a premium service and a personalized experience.

Transdev's answer

Transdev operates two on-demand pilots in the Sydney area for TfNSW. Our first- and last-mile service delivers passengers to and from the famous Manly Wharf, a popular hub for ferry trips to downtown Sydney. We also operate a "point-to-point" service in the Sutherland Shire that includes connections to rail and bus stops. The pilots combine pioneering technology with high operational efficiency.

A Commitment to Innovation

› We built a state-of-the-art app and website that are both tailored for the Sydney pilots.
› The app and website capture extensive data on customer behaviors, allowing us to evaluate and adjust the service to meet our client's and passengers' needs.
› The model for the pilots is agile and adaptive, with built-in ways to further develop them, including network redesign, further integration with other transportation modes and roll-out to additional payment options.

Integrated with traditional transit

› The pilots integrate with Transdev's bus, light rail, and ferry operations in Sydney, supporting mutual ridership growth and a seamless experience for passengers as they move between modes.

› We work in close partnership with local councils and stakeholders to start operations within 12 weeks and to adjust the pilots to community needs.

A service for everyone

› Our services are fully accessible for passengers in wheelchairs. Shuttles are equipped with an electric ramp and on-board wheelchair space.
› Customers without smartphones or credit cards can book by calling in to our contact center, and can pay our drivers in cash.

Superior customer experience

› Drivers' profiles differ from traditional transportation businesses. Our drivers are "Journey Makers" – a more customer-focused workforce, with a higher proportion of females.
› We deliver a premium on-board experience: free WiFi, USB plugs, CCTV, extra ceiling height, privacy glass, electric sliding door, and a modern interior finish.

Results

After two months of operations:
› Ridership growth: 20% increase every week since the start of operations;
› Superior customer service: 100% of our drivers are rated 4 or 5 stars;
› High customer satisfaction: Both our pilots are rated 4.84/5 or better.

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The Netherlands

BrengFlex, BravoFlex and AMLFlex Integrating On-Demand services within existing networks

Contract facts

TRANSIT AUTHORITIES
- Arnhem-Nijmegen metropolitan area: BrengFlex
- Helmond: BravoFlex
- Amsterdam metropolitan area: AMLFlex

OPERATOR
Transdev Netherlands (Connexxion)

CONTRACT START AND DURATION
- BrengFlex: December 2016 until end of 2018
- BravoFlex and AMLFlex are part of a public transit concession

Key figures

CUSTOMERS PER MONTH
- BrengFlex: 12,000
- BravoFlex: 3,000
- AMLFlex: 9,000

VEHICLES
- BrengFlex: 18. Mixed fleet of Hyundai Ioniq and Mercedes Sprinter shuttles
- BravoFlex: 10. Mixed fleet of Hyundai Ioniq and Mercedes Sprinter shuttles
- AMLFlex: 10. Mixed fleet of Nissan Leaf and Mercedes Sprinter shuttles

BOOKING OPTIONS
By app or by phone through our call center

Context

Transdev initiated discussions with several public transit authorities in the Netherlands to integrate ridesharing services into transit networks, with the main goal of providing first- and last-mile service. In 2016, Transdev launched BrengFlex, our on-demand solution, for the Province of Gelderland and their network Breng. Shared rides are a key component of Gelderland region's long-term mobility strategy and BrengFlex was introduced to complement the existing network. Following the success of BrengFlex, the concept was launched in two public transit concessions in the Netherlands.

Objectives

- Provide public transit authorities with on-demand first- and last-mile solutions tailored to local needs.
- Reduce the cost per passenger kilometres for transit authorities in low-density areas.
- Guarantee seamless trips.

Transdev's answer

We develop our Flex solutions to fit the needs and character of every city. BrengFlex transports passengers in low-emission cars within two zones in the Arnhem-Nijmegen metropolitan area, focusing on connecting passengers to bus stops. The BravoFlex service runs between bus stops and other destinations in the city of Helmond. Finally, AMLFlex serves mainly train stations in the Amsterdam area.

World-class technology developed in-house

- All three Flex services use world-class routing technology, an app, and a website that were developed by Transdev Netherlands.
- Most bookings are made through the purpose-built app.
- This routing and app technology is also used for Transdev's on-demand first- and last-mile solutions in Australia and the United States.

Tailoring the first and last mile to local needs

- The diversity of the operations shows that Flex technology can be easily adapted to complement local public transit networks.
- For all operations, dual-branding with Flex and the network name maintain continuity while highlighting an innovative new service.

Great customer data

- We collect advanced and segmented customer data, allowing us to adjust the service to best meet passenger needs, and to market our solutions to the most likely users.
- Regular passenger feedback lets us know what works and what doesn't, so we can make changes quickly when needed.

Accessible for all

- All Flex operations are fully accessible.
- Accessible shuttles are equipped with an electric ramp and on-board wheelchair space.
- Customers without smartphones and credit cards can book by calling in, and can pay with the public transit system's smartcards.
- We engage with mobility-challenged passengers in person at roadshows to nursing homes and aged care facilities.

Results

- Ridership growth: All three contracts have seen consistent growth since starting operations.
- High customer satisfaction: Average ratings of 4.8/5 for BrengFlex, 4.7/5 for BravoFlex, and 4.4/5 for AMLFlex.
- Combined, the operations carry about 24,000 passengers per month.
- 16% of BrengFlex passengers are car drivers.

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Tampa, Florida (United States)

HART HyperLINK – Increasing access to transit in underserved areas

Contract facts

TRANSIT AUTHORITY
Hillsborough Area Regional Transit (HART)

OPERATOR
Transdev North America

CONTRACT START
November 2016

CONTRACT DURATION
To June 2018

Key figures

NETWORK
Four zones, each with a three-mile radius. Travel is to and from transit stops (USD 1) or point-to-point within the zones (USD 3)

VEHICLES
16 vehicles, including four fully electric Tesla Model Xs

STAFF
1 general manager and 20 drivers

BOOKING OPTIONS
HART HyperLINK app, or by phone through our call center

Context

The goal of the HART HyperLINK service is to increase access to transit for underserved communities without the density to support fixed-route bus service. Prior to the LINK program, some of these communities had lost bus routes due to funding cuts. HART launched LINK in part to respond to these communities' needs. HART ran a competitive procurement for a first- and last-mile ridesharing solution. Transdev beat out tough competition, including Uber, to design the solution, develop the technology, and manage operations. Transdev North America designed the app, which was integrated with Transdev's Flex routing software developed in the Netherlands.

Objectives

› Expand public transit access to communities that are far from bus stops.
› Reduce per-passenger costs, compared to running fixed-route buses through low-density communities.
› Ensure full accessibility for passengers in wheelchairs and without smartphones.
› Test a pilot on-demand solution for potential future expansion to other poorly served areas.
› Introduce the first zero-emission electric vehicles into the HART fleet.

Transdev's answer

HyperLINK serves four zones, each with a three-mile radius. Passengers can travel to or from public transit stops within those zones for USD1, or point-to-point within the zones for USD3. Passengers can book in an app or by calling Transdev's national call center.

Reshaping the customer experience with transit

› The service is personalized and quick. Rather than long waits at bus stops for infrequent service, passengers can now book instantly and wait in their homes.
› Many passengers ride in high-end Tesla Model Xs, providing a superior customer experience.

Expanding tampa's "innovation place"

› The fully electric Tesla Model Xs provide service near the University of South Florida's Innovation Place.
› This unique partnership further integrates technology into the fabric of the city.

A service for everyone

› HyperLINK provides a fully accessible service.
› Passengers can book through the app, or by calling our national call center.
› Payment can be done by credit card or cash to the driver.

World-class technology, tailored to local needs

› Transdev designed an app especially for HART's needs, and branded for HART.
› The app is supported by our Flex routing technology, developed in the Netherlands, and proven as an efficient and scalable solution.
› Extensive customer behavioral intelligence capture.

Results

› Ridership growth: HyperLINK now serves more than 5,000 passengers per month. Ridership has grown an average of 42% each month since launch.
› Great customer satisfaction: Our 2017 average in-app trip rating was 4.86 out of 5, with 20,000 total trips rated.

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Veloway

Biking your way

A bicycle is typically the fastest way to travel up to 5 km (3.1 miles) in a city. As such, bicycles can play a crucial role in a city's mobility network, going beyond filling first- and last-mile gaps to serving as some residents' main form of transportation.
Technological development is rapidly increasing options for bikesharing, but there are risks.
New dockless systems are cheap to roll out, but it can be difficult to manage the bicycles—they are easily vandalized and can create a public nuisance when parking isn't controlled. Traditional docked systems are easier to control, but more expensive to install and operate.

Transdev's solution: "Veloway"

Veloway's approach is simple: we do it all. From well-established operators of docked bikeshare systems to the latest in dockless and other bikeshare technologies, Veloway recognizes that every city has different needs and contexts, and designs bikeshare and bicycle parking solutions to meet those needs.
Veloway will:

› Encourage bicycling within cities to reduce congestion and emissions from private cars;
› Increase public transit use by placing bikeshare and secure parking for private bicycles at transit stations;
› Promote bicycling as part of a healthy lifestyle.

Integrated trip planning with public transit

› In several cities, Veloway bicycles are integrated with public transit planning apps. This allows passengers to make quick decisions about the best way to get around, based on real-time information on bus and tram locations, and on which bicycles are availably nearby.
› For example, Transdev subsidiary Cityway developed an app for the entire Provence-Alpes-Côte d'Azur region in southeastern France. The app integrates real-time updates on public transit vehicles with other modes, including Veloway's bikesharing system in Nice, the fifth-largest city in France.

Secure parking for private bicycles

Our mission is to help people get around by bicycle, whether shared or private. For many people, risk of theft or vandalism is an important barrier to riding their own bicycles. That is why Veloway designs and builds secure bicycle parking facilities near transit stations.
The facilities go far beyond a basic bike rack. They are collective parking facilities secured by a single contactless pass. For many cities, the public transit network's smart card can be used.

Deployments

13 AUTHORITIES THROUGHOUT FRANCE

› Dunkerque
› Calais
› Le Havre
› Île-de-France Mobilités (Le Vésinet, Bezons, Argenteuil, Villepinte station and Val d'Europe station)
› Niort
› Rochefort
› Villeneuve-sur-Lot
› Montauban
› Mont-de-Marsan
› Montpellier
› Avignon
› Valence
› Nice

VELOWAY
A fully owned subsidiary of Transdev, Veloway operates bikeshare and bicycle parking. The operations include short- and long-term rentals (3,500 bicycles), as well as secure bicycle parking at transit stations (1,040 bicycle parking stations across France).

BOOKING OPTIONS:
Veloway operates hundreds of bicycle docks; passengers unlock bicycles with a few pushes of a button at the dock.

RENTING OPTIONS
For long-term rentals—often a few months, and for as long as a year— Veloway staff work with customers directly.

Performances

› Users made almost 2 million trips on Veloway bikeshare systems in 2017.
› Combined, our four largest systems account for more than 20,000 active users every day.

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Chronopro

Beauvais, Vitrolles, Courtaboeuf and Mulhouse – FRANCE

Contract facts

TRANSIT AUTHORITY
Four transit authorities in the cities of Beauvais, Vitrolles, Courtabœuf, and Mulhouse

OPERATOR
Transdev

CONTRACT START
Beauvais and Vitrolles pilots starting in August 2016
Courtabœuf and Mulhouse starting mid-2017

Key figures

NETWORK
Each Chronopro shuttle connects a major transit hub and pick-up points within a pre-defined zone.
The service is designed to connect low-density areas, where jobs and/or housing are often concentrated, with high-frequency transit lines.

VEHICLES
Small-to-medium size passenger vans depending on demand.

BOOKING OPTIONS
Via the Chronopro app or through the website. Can be reserved weeks in advance, scheduled for regular pick-ups, or booked up to 30 minutes prior to the trip (space permitting, last-minute reservations are also possible). For journeys originating at a transit hub, reservation is optional.

Context

Chronopro was born from a recurrent issue – how to connect residential and employment clusters to fixed-route transit? Many neighbourhoods and employment centres (especially industrial parks) include homes and workplaces which are too far to conveniently walk to transit, but are too spread out for fixed-route service to be efficient.

Objectives

› Deliver frequent and easy-to-use service between high-frequency transit lines and pick-up points in employment clusters and low-density neighbourhoods.
› Improve access to low density areas, especially for people who do not have personal cars.
› Reduce operating costs, compared to traditional fixed-route bus service.

Transdev's answer

To meet this need, Transdev developed Chronopro. This on-demand service guarantees connections to and from transit hubs, providing frequent departures and flexible routing within pre-defined zones.

Guaranteed connections

› Arrival times at transit hubs are designed to coincide with fixed-route departures, so customers never miss a connection.
› Thanks to Chronopro's flexibility, whenever possible shuttles will wait for delayed buses or trains.

Better access to more jobs

A key goal for Chronopro was connecting people to employment centers. The service has helped both employers and workers by:
› Improving access to thousands of jobs;
› Invigorating industrial parks with a modern and convenient form of public transit, making employers outside of urban centers competitive once again.

Convenient Payment Systems

› Passengers can pay the same ways they do on the bus or tram.
› For most networks, this means that passengers can use their smart cards or a mobile ticket.

Cheaper transit, lowercongestion

› For the same price as a fixed-route bus, Chronopro can deliver more convenient service over a larger area.
› By encouraging people in low-density areas to use public transit, and by making suburban employment centers newly accessible, Chronopro can contribute to lowering traffic congestion.

Growing ridership

› Ridership has grown quickly for Chronopro operations. In Vitrolles, after only 16 months of service, the total number of trips rose 33 percent.

Results

› Growing access to jobs: In Vitrolles and Beauvais alone, Chronopro improved access to more than 21,000 jobs.
› Faster trips, guaranteed. In Vitrolles, passengers' trips take 50 percent less time than before the service started. For those looking to connect from trains to nearby Marseille, Chronopro is flexible.

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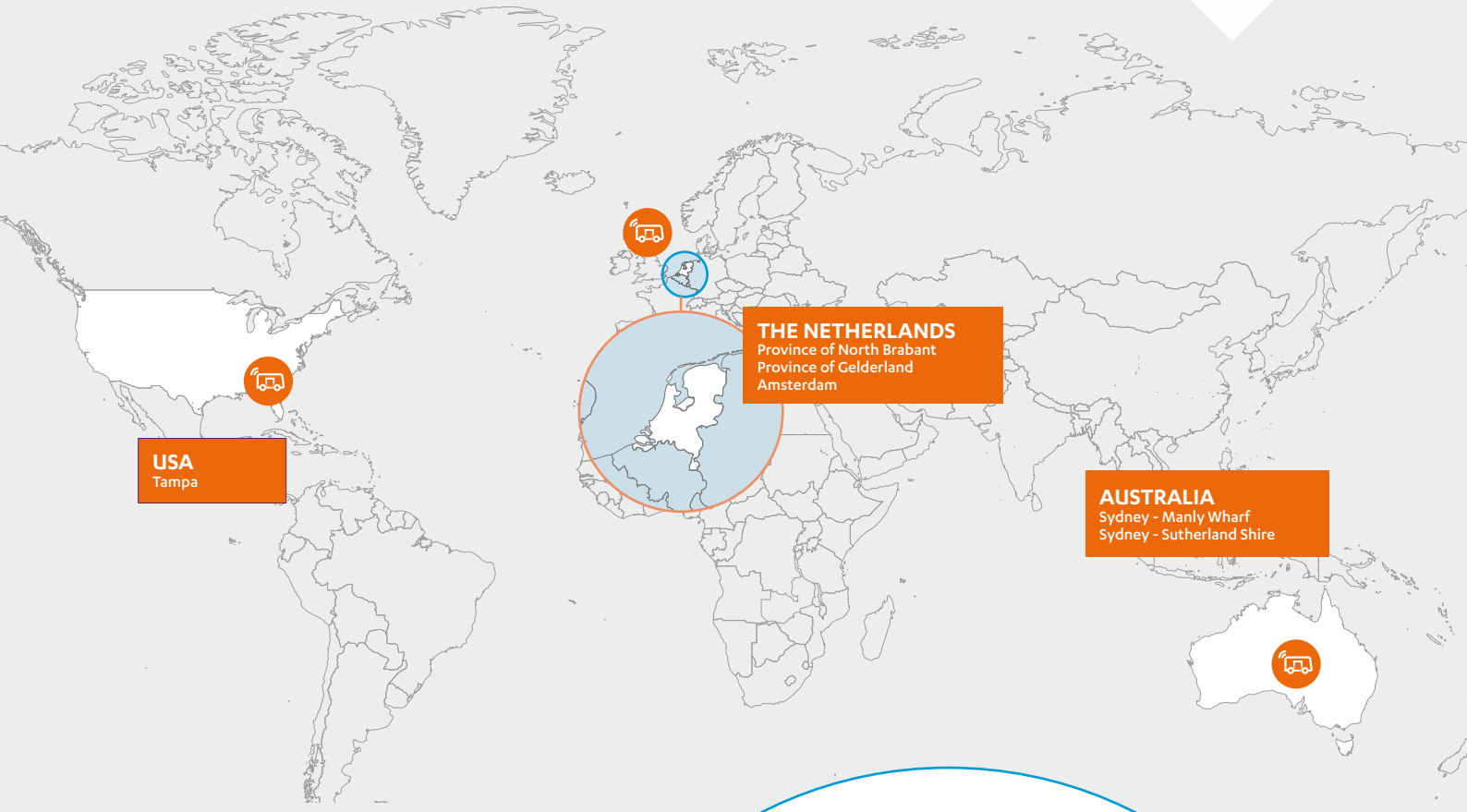
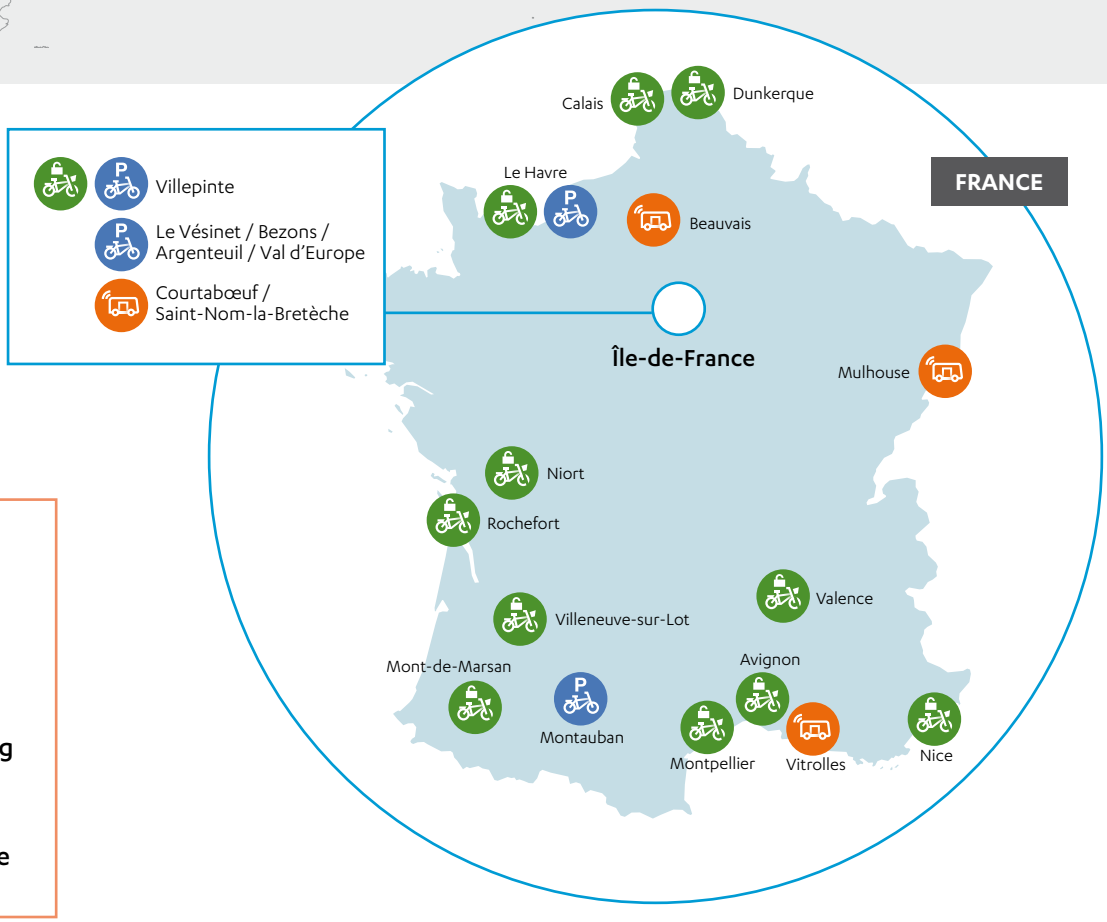
Transdev First- and Last-Mile Solutions





Bikeshare

Bicycle parking

Shared Shuttle

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