INNOVATING FOR MOBILITY WITH KEOLIS

Review of 2021 initiatives

KEOLIS

Turning innovation into action

Innovation is at the heart of our corporate identity. It supports our ambition to make mobility easier, safer and more sustainable.

Every year innovations are developed within each of our subsidiaries and business lines. These creative advancements provide concrete solutions to the operational challenges confronted by public transportation on a daily basis. These innovations, whether disruptive or incremental, concern all our businesses and take various forms.

Through this overview presented at Keolis Innovation Awards, we invite you to discover highlights of initiatives deployed in 2021. Each in their own way establish Keolis as the partner of choice for both local authorities and the Public Transport Authority, offering the most pleasant and inclusive mobility experience possible to passengers, attracting and retaining talent, and providing concrete solutions to the challenges of climate change.

For our comprehensive innovation news, go to

INNOVATION.KEOLIS.COM

As a pioneer in the development of public transport, Keolis partners with public policy makers who consider shared mobility an important lever for developing the attractiveness and vitality of their territory. Active in 15 countries, we work every day to better meet our stakeholders' expectations, creating value for each of them.

OUR PARTNERS

Improving the mobility offer

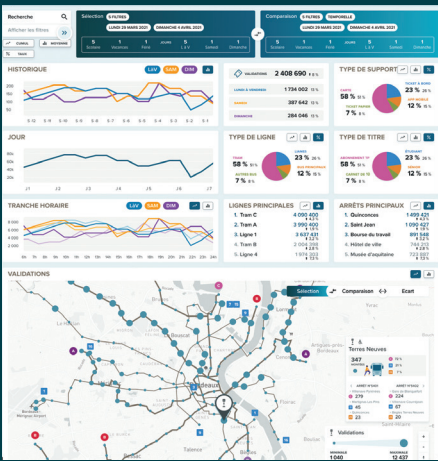## «KEOLIS EVOLVE X PATTERNS»: territory's mobilities at a glance.

Keolis North America

To conduct these studies, Keolis North America leverages the Patterns solution. By collecting GPS tracks and translating them into travel flows, Patterns provides a multimodal, door-to-door picture of mobility in a territory. It highlights the true origin-destination, modal shares, travel times... An innovative approach coupled with detailed knowledge of the territory that allows Keolis North America to recommend fine-tuned mobility service offerings that correspond to observed behaviors.

«HYPER PEAK MITIGATION»: smoothing out the peak in ridership on a national scale.

Keolis Nederland

With travelers expressing high expectations for comfort and social distancing, smoothing out peaks and peak days is a priority that cannot be ignored or further delayed.
In the Netherlands, national framework agreements between Keolis Nederland and higher education associations have established terms and conditions for staggering class times nationwide. This was an effective approach that immediately smoothed out the peaks in ridership at the beginning and end of the day.

Controlling structural affluence

Cultivating a relationship of trust

«IMPULSE»: sharing a common vision of performance with our PTAs.

Keolis Group - Innovation & Industrialization Department

With its ergonomic design interface, the Impulse digital platform makes it easy to visualize and appropriate network data, in a relationship of trust and transparency. At a glance it is possible to understand the scope of activity on a given day and to accurately track key performance indicators: ridership, stops, punctuality, etc. The tool also provides an «expert» mode, to further analyze the network in detail by mode, by line, by passenger profile. The Impulse platform is a valuable reference tool for optimizing and developing the offer.

Improving the city's flow

«RESPOND»: improving commercial speed.

Keolis Downer

Commercial speed is a key issue for the attractiveness of transportation networks as well as for cost control. By creating a cross-functional working group, with participants from various functions (drivers, depot managers, elected officials, city technicians, etc.), Respond is able to identify a variety of traffic management solutions to improve the commercial speed and performance of the tramway network : traffic lights, line markings, tramway separation. It is a reference methodology that has enabled the implementation of 360° structural modifications to optimize the fluidity of the network in a sustainable manner.

Other exciting developments:

DATABUZZ
both a showroom and an interactive technological laboratory, this high-tech concept bus raises Belgian students' awareness of Datas and its applications.

NEXT PLATFORM
Keolis Amey Docklands improves safety through systemic incident analysis, based on the latest research in safety management.

ATTRACT AND SATISFY OUR PASSENGERS

Anticipate...

PREDICTING TRAFFIC WITH ARTIFICIAL NEURAL NETWORKS.

Keolis Nederland

To predict the number of passengers at stops in the short, medium and long term, Keolis Nederland has explored a new artificial intelligence technology. This computer system mixes internal and external data - such as the weather - and is inspired by how the human brain works to learn and improve predictions.

MEASURING RIDERSHIP IN REAL TIME AND INFORMING PASSENGERS.

Keolis Velizy

Depending on the specific context of each Keolis network, different technological solutions are explored to know the number of passengers on board - counting cells, connected ticketing, axle weight, crowdsourcing with the same ambition: to inform passengers and give them the choice of comfort. In Vélizy, the DotPulse solution, based on the collection and analysis of Wifi traces, has been deployed. It enables real-time and predictive communication of ridership levels to the operations department and to passengers. Moreover, it allows advanced marketing analysis such as real boarding and alighting, recurrent ridership... key information for a better understanding of our passengers!

...for the comfort of all

Accessible networks ...

«DIVIAMOBILITÉS»: a single app and account, accessible to the greatest number.

Keolis Dijon Mobilités

Under a strong umbrella brand - DiviaMobilités - Keolis operates all the mobility solutions in the territory under the PTA's purview : tramway, bus, bicycle, carpooling, and even parking (in parking lots and on roads). This service approach is naturally reflected in a single agency, a single application, a single website, incentive-based multimodal fare offers, and the brand new «Liberté package»: a single customer account with post-payment for all mobility services.
To ensure that the route search service is accessible to as many people as possible, the DiviaMobilités application has been enhanced with a Voice Coach. It allows users to make voice requests concerning buses, tramways, and self-service bicycles (next passages, timetables, available docking stations...). Simple and practical!

«NAVILENS»: making orientation and passenger information at stations and stops more accessible.

Keolis Group - Innovation & Industrialization Department

Thanks to a mobile application using an image recognition algorithm and patented «augmented» QR codes, Navilens makes public transport more inclusive and accessible, especially for those with visual disabilities. With their smartphone, users can capture these QR codes, even at great distances, and listen to voice announcements in 33 languages giving guidance and information on train or bus schedules. This technology is also useful for other types of travelers, including tourists. A first in France.
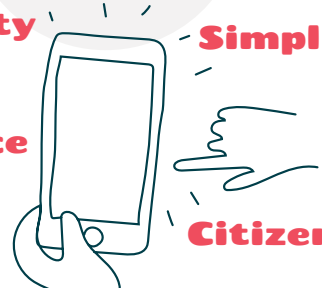
...for everyone

MaaS, the true travel companion

Serenity

Simplicity

Choice

Citizenship

«MURRAY»:
the autonomous shuttle service
in rural areas.

Keolis Downer

Because autonomous mobility is not just for large cities, Keolis is also supporting rural areas in their new mobility projects. In Renmark, an autonomous driverless shuttle service has been deployed to offer the elderly and individuals with reduced mobility a means of public transportation linking their homes to medical, social, and commercial destinations.

Self driving

«STAR'T»: the regular
inter-communal carpooling line.

Keolis Rennes

For roads between cities with a large number of commuters, there is an alternative to the bus if the creation of a regular line is not possible: regular carpooling lines! This is the new service deployed by Keolis Rennes on the STAR network of Rennes Metropole, in partnership with Ecov: a line open from 7am to 8pm, Monday to Friday. The operation is similar to that of a traditional bus line: no reservation, 5 defined stops marked by shelters, a high frequency of passage, and a guaranteed departure within 30 minutes. Drivers offering a trip between 2 or more stops on the line are compensated, whether they pick up a passenger or not.

«QUB MAT AND QUB NOZ»: dynamic
on-demand transportation takes over.

Keolis Quimper

While transport on demand services are becoming more and more widespread in order to organize first mile – last mile services, Quimper Bretagne Occidentale has set out to solve another problem: facilitating mobility outside the network's opening hours. QUB MAT allows you to book your shared transportation between 6am and 6.45am; and QUB NOZ in the evening from 8pm to midnight. Reservations can be made via the Via application or by telephone, up to 1 hour before departure. Trips are made from one stop to another in the network. When buses are sleeping, shuttles are out and about!

Plus d'informations et réservations
sur l'appli « QUB l'appli »
ou www.qub.fr

on demand

20 montées

16 validations

Qu'e Besan

Validati les co

...such as behavioral science

«FRAUDMETER»: dynamic nudge in
the fight against fraud.

Keolis Besançon Mobilités

An experiment combining real-time data and behavioral science! Using real-time estimated fraud data (a solution combining counting cells and connected ticketing), Keolis Besançon broadcasts messages on board to effectively encourage customers to validate their tickets. A factual and entertaining communication tool to accompany behavioral changes in the long term.

THE GROUND FOR SAFER MOBILITY

Detect risk situations

CCTV AI: The Artificial Intelligence video surveillance experiment.

Keolis Amey Dockland

CCTV AI aims to improve security and reduce risks on a rail network by detecting potential intrusions. When an anomaly is detected, an alert to the control center is triggered to intervene as soon as possible. Artificial Intelligence then takes over to detect and identify the nature of the incident, in order to accelerate its resolution.

Anticipate operations

REMOTE CONDITION MONITORING: industrializing maintenance.

KeolisAmey Docklands

Thanks to the deployment of connected sensors and the know-how in data processing, Keolis Amey Dockland optimizes its maintenance plan.
By monitoring the condition of the various equipment in real time, maintenance operations are triggered at the right time. An agile organization that improves equipment reliability, passenger safety and the network's operational performance.

Design to protect

IMPROVED SEPARATION OF CAR AND TRAMWAY TRACKS IN MELBOURNE.

Keolis Downer

Keolis Downer has implemented an innovative method of separating car and streetcar lanes on the network at identified collision risk areas. This solution, based on recycled materials, has minimal impact on the existing infrastructure, allowing for flexible, safe and efficient roadway adaptation. The increased separation ensures passenger and motorist safety while improving fleet performance and availability.

«RETROVISION» : increase road safety for all.

Keolis Lyon

This innovative digital system deployed by Keolis Lyon does away with the outside mirrors in favor of two discreet «camera units.» Placed on either side of the vehicle, these camera units display images on video screens placed in the driver's cab. This system provides drivers with better visibility, day and night, thanks to interior «screen mirrors» that are protected from the elements, and therefore impervious to fog and ice. Another advantage is that they almost completely eliminate blind spots in the immediate vicinity of the vehicle.

Prevent to protect

Other exciting developments:

THANKS TO 3D PRINTING, bodywork repair is optimized in the Keolis Sud Allier network (France) and the spare parts in Dubai are manufactured locally on demand!

VIRTUAL REALITY:
an interactive immersion into the heart of Keolis' professions.

Keolis Métropole Orléans

Equipped with a virtual reality headset, it is possible to step into the shoes of a tramway or bus driver, to maintain the trains, or to pilot the network from Keolis Métropole Orléans' Central Control Station. An immersive 360° vision poised to attract young people to the mobility professions.

Attracting talent

«WE@KEOLIS»:
the transverse and non-hierarchical gender diversity network of Keolis group.

Keolis Group

We@Keolis network is an employee initiative which promotes gender diversity as a source of well-being at work and performance quality, and one which recognizes that a shared mobility company must reflect the image of its passengers. It is aimed at all employees who wish to work towards gender diversity. This network aims to amplify Human Resources actions and accelerate gender diversity by offering a program of events (gender diversity culture, inspiring internal portraits, best practices, etc.).

we@keolis

Inspire

Decarbonizing mobility

«SOLAR CELLS»: equipping buses with rooftop solar panels.

Keolis Denmark

Investing in alternative energy is a political and societal priority. Keolis Denmark has equipped its diesel buses with solar panels. The energy produced by the solar cells helps to limit greenhouse gas emissions and reduce its impact on air pollution for a more environment-friendly mobility.

DATALAB QUALITÉ DE L'AIR:
using data to act responsibly.

Keolis Rennes

Air quality is an issue in regional Climate Air and Energy Plans. This research work collects, cross-references, and analyzes the factors influencing air quality in the underground railways of Rennes city. It aims to implement all actions to control, as much as possible, the air quality in stations.

Support a healthy environment

«SMART MOBILITY NUDGING»: mobility coaching from banking applications.

Keolis Sverige

Because modal shift will not happen without a «helping hand», Keolis Sverige and the fintech Gokind have jointly developed an innovative coaching service: a system of rewards for more eco-responsible mobility that favors the use of public transport.

Changing behavior

Support biodiversity

«LA JALLÈRE»: the bus depot is becoming greener .

Keolis Bordeaux Métropole

Thanks to new solutions for converting green spaces adjacent to the bus depot, Keolis Bordeaux is committed to environmentally friendly : phytoremediation, land reclamation, natural and dry hedges, etc...

Other exciting developments

In order to limit its environmental impact, Keolis Lyon is experimenting with a new water-repellent process, the «ecowash», which reduces water consumption when cleaning vehicles.

Many initiatives support more active mobility for employees, such as the loan of electrically-assisted bicycles for home-work trips, the installation of scooter storage in bus drivers' areas, or even the ground regulation on mountain bikes.

We're no nonsense when it comes to open innovation.
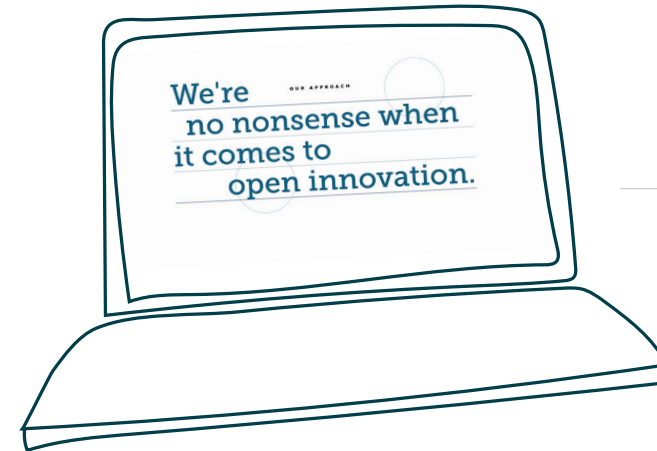
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WE'RE NOT JUST TALKING ABOUT INNOVATION, WE'RE DOING IT.

KEOLIS

OPEN INNOVATION