



## Autonomous Vehicles to Evolve to a New Urban Experience

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### DELIVERABLE D5.1

#### Transport management policies' definition



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# Table of Contents

Table of Contents .....	III
Acronyms.....	IV
Executive Summary .....	1
1 Introduction .....	2
1.1 On-demand Mobility.....	2
1.2 Autonomous Vehicles .....	2
1.2.1 Autonomous vehicle operation overview .....	3
1.2.2 Autonomous vehicle capabilities in AVENUE .....	4
1.1 Preamble.....	5
2 Definition of autonomous shuttle policies .....	<b>Erreur ! Signet non défini.</b>
3 Politics of PTO's .....	6
3.1 Lyon .....	6
3.1.1 General local policies in Lyon.....	6
3.1.2 KEOLIS LYON .....	7
3.1 Geneva .....	12
3.1.1 General local policies in Geneva .....	12
3.1.2 TPG.....	12
3.1 Luxembourg.....	17
3.1.1 General local policies in Luxembourg .....	18
3.1.2 Saltz-Lentz.....	18
3.2 Copenhagen.....	30
3.2.1 General local policies in Copenhagen .....	30
3.2.2 Amobility.....	30
4 Conclusion .....	33

# Acronyms

ADS	Automated Driving Systems	MEM	Monitoring and Evaluation Manager
AI	Artificial Intelligence	MT	MobileThinking
AM	Autonomous Mobility	OCT	General Transport Directorate of the Canton of Geneva
API	Application Protocol Interface	ODD	Operational Domain Design
AV	Autonomous Vehicle	OEDR	Object And Event Detection And Response
BM	Bestmile	OFCOM	(Swiss) Federal Office of Communications
BMM	Business Modelling Manager	PC	Project Coordinator
CAV	Connected and Autonomous Vehicles	PEB	Project Executive Board
CB	Consortium Body	PGA	Project General Assembly
CERN	European Organization for Nuclear Research	PRM	Persons with Reduced Mobility
D7.1	Deliverable 7.1	PSA	Group PSA (PSA Peugeot Citroën)
DC	Demonstration Coordinator	PTO	Public Transportation Operator
DI	The department of infrastructure (Swiss Canton of Geneva)	PTS	Public Transportation Services
DMP	Data Management Plan	QRM	Quality and Risk Manager
DSES	Department of Security and Economy - Traffic Police (Swiss Canton of Geneva)	QRMB	Quality and Risk Management Board
DTU test track	Technical University of Denmark test track	RN	Risk Number
EAB	External Advisory Board	SA	Scientific Advisor
EC	European Commission	SAE Level	Society of Automotive Engineers Level (Vehicle Autonomy Level)
ECSEL	Electronic Components and Systems for European Leadership	SAN	(Swiss) Cantonal Vehicle Service
EM	Exploitation Manager	SDK	Software Development Kit
EU	European Union	SLA	Sales Lentz Autocars
EUCAD	European Conference on Connected and Automated Driving	SMB	Site Management Board
F2F	Face to face meeting	SoA	State of the Art
FEDRO	(Swiss) Federal Roads Office	SOTIF	Safety Of The Intended Functionality
FOT	(Swiss) Federal Office of Transport	SWOT	Strengths, Weaknesses, Opportunities, and Threats.
GDPR	General Data Protection Regulation	T7.1	Task 7.1
GIMS	Geneva International Motor Show	TM	Technical Manager
GNSS	Global Navigation Satellite System	TPG	Transport Publics Genevois
HARA	Hazard Analysis and Risk Assessment	UITP	Union Internationale des Transports Publics (International Transport Union)
IPR	Intellectual Property Rights	V2I	Vehicle to Infrastructure communication
IT	Information Technology	WP	Work Package
ITU	International Telecommunications Union	WPL	Work Package Leader
LA	Leading Author		
LIDAR	Light Detection And Ranging		

# Executive Summary

In this document, the different PTO's describe their policy related to the operation and development of the autonomous vehicle.

As one of the objectives of the H2020 Avenue programme is to aim for the integration of autonomous vehicles in the public transport network, each PTO has based its policy on elements of the general policy of the company and the territory, and has made the possible variations and adaptations for autonomous shuttles.

In these different policies, some elements are therefore based on the projection of what the service will be like the day when fleets of shuttles are available.

Other points, however, are based on the technical elements currently available. It is obvious that some aspects, which will have to be integrated in the future in the policies applied to autonomous shuttles, are directly based on the skills of autonomous shuttles. The PTO's today believe that it is better to rely on the real capabilities of autonomous shuttles to build adapted services, rather than betting on future evolutions that nobody could commit to today.

This paper will therefore discuss the different ways in which PTO's are addressing issues related to service accessibility, operational organisation and customer promises, on-board safety and passenger entitlements.



# 1 Introduction

AVENUE aims to design and carry out full-scale demonstrations of urban transport automation by deploying, for the first time worldwide, fleets of autonomous minibuses in low to medium demand areas of 4 European demonstrator cities (Geneva, Lyon, Copenhagen and Luxembourg) and 2 to 3 replicator cities. The AVENUE vision for future public transport in urban and suburban areas, is that autonomous vehicles will ensure safe, rapid, economic, sustainable and personalised transport of passengers. AVENUE introduces disruptive public transportation paradigms on the basis of on-demand, door-to-door services, aiming to set up a new model of public transportation, by revisiting the offered public transportation services, and aiming to suppress prescheduled fixed bus itineraries.

Vehicle services that substantially enhance the passenger experience as well as the overall quality and value of the service will be introduced, also targeting elderly people, people with disabilities and vulnerable users. Road behaviour, security of the autonomous vehicles and passengers' safety are central points of the AVENUE project.

At the end of the AVENUE project four year period the mission is to have demonstrated that autonomous vehicles will become the future solution for public transport. The AVENUE project will demonstrate the economic, environmental and social potential of autonomous vehicles for both companies and public commuters while assessing the vehicle road behaviour safety.

## 1.1 On-demand Mobility

Public transportation is a key element of a region's economic development and the quality of life of its citizens.

Governments around the world are defining strategies for the development of efficient public transport based on different criteria of importance to their regions, such as topography, citizens' needs, social and economic barriers, environmental concerns and historical development. However, new technologies, modes of transport and services are appearing, which seem very promising to the support of regional strategies for the development of public transport.

On-demand transport is a public transport service that only works when a reservation has been recorded and will be a relevant solution where the demand for transport is diffuse and regular transport is inefficient.

On-demand transport differs from other public transport services in that vehicles do not follow a fixed route and do not use a predefined timetable. Unlike taxis, on-demand public transport is usually also not individual. An operator or an automated system takes care of the booking, planning and organization.

It is recognized that the use and integration of on-demand autonomous vehicles has the potential to significantly improve services and provide solutions to many of the problems encountered today in the development of sustainable and efficient public transport.

## 1.2 Autonomous Vehicles

A self-driving car, referred in the AVENUE project as **an Autonomous Vehicle (AV)** is a vehicle that is capable of sensing its environment and moving safely with no human input. The choice of Autonomous vs Automated was made in AVENUE since, in the current literature, most of the vehicle concepts have a

person in the driver's seat, utilize a communication connection to the Cloud or other vehicles, and do not independently select either destinations or routes for reaching them, thus being "automated". The automated vehicles are considered to provide assistance (at various levels) to the driver. In AVENUE there will be no driver (so no assistance will be needed), while the route and destinations will be defined autonomously (by the fleet management system). The target is to reach a system comprising of vehicles and services that independently select and optimize their destination and routes, based on the passenger demands.

In relation to the SAE levels, the AVENUE project will operate SAE Level 4 vehicles.



## SAE J3016™ LEVELS OF DRIVING AUTOMATION

		SAE LEVEL 0	SAE LEVEL 1	SAE LEVEL 2	SAE LEVEL 3	SAE LEVEL 4	SAE LEVEL 5
What does the human in the driver's seat have to do?		You <u>are</u> driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You <u>are not</u> driving when these automated driving features are engaged – even if you are seated in “the driver's seat”		
		You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	
		These are driver support features			These are automated driving features		
What do these features do?		These features are limited to providing warnings and momentary assistance	These features provide steering <b>OR</b> brake/acceleration support to the driver	These features provide steering <b>AND</b> brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions	
		<ul style="list-style-type: none"><li>• automatic emergency braking</li><li>• blind spot warning</li><li>• lane departure warning</li></ul>	<ul style="list-style-type: none"><li>• lane centering <b>OR</b></li><li>• adaptive cruise control</li></ul>	<ul style="list-style-type: none"><li>• lane centering <b>AND</b></li><li>• adaptive cruise control at the same time</li></ul>	<ul style="list-style-type: none"><li>• traffic jam chauffeur</li></ul>	<ul style="list-style-type: none"><li>• local driverless taxi</li><li>• pedals/steering wheel may or may not be installed</li></ul>	<ul style="list-style-type: none"><li>• same as level 4, but feature can drive everywhere in all conditions</li></ul>
Example Features							

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### 1.2.1 Autonomous vehicle operation overview

We distinguish in AVENUE two levels of control of the AV: micro-navigation and macro-navigation. Micro navigation is fully integrated in the vehicle and implements the road behaviour of the vehicle, while macro-navigation is controlled by the operator running the vehicle and defines the destination and path of the vehicle, as defined the higher view of the overall fleet management.

For micro-navigation Autonomous Vehicles combine a variety of sensors to perceive their surroundings, such as 3D video, lidar, sonar, GNSS, odometry and other types sensors. Control software and systems, integrated in the vehicle, fusion and interpret the sensor information to identify the current position of the vehicle, detecting obstacles in the surround environment, and choosing the most appropriate reaction of the vehicle, ranging from stopping to bypassing the obstacle, reducing its speed, making a turn etc.

For the Macro-navigation, that is the destination to reach, the Autonomous Vehicle receives the information from either the in-vehicle operator (in the current configuration with a fixed path route), or from the remote control service via a dedicated 4/5G communication channel, for a fleet-managed operation. The fleet management system takes into account all available vehicles in the services area, the passenger request, the operator policies, the street conditions (closed streets) and send route and stop information to the vehicle (route to follow and destination to reach).

## **1.2.2 Autonomous vehicle capabilities in AVENUE**

The autonomous vehicles employed in AVENUE fully and autonomously manage the above defined, micro-navigation and road behaviour, in an open street environment. The vehicles are autonomously capable to recognise obstacles (and identify some of them), identify moving and stationary objects, and autonomously decide to bypass them or wait behind them, based on the defined policies. For example with small changes in its route the AVENUE shuttle is able to bypass a parked car, while it will slow down and follow behind a slowly moving car. The AVENUE vehicles are able to handle different complex road situations, like entering and exiting round-about in the presence of other fast running cars, stop in zebra crossings, communicate with infrastructure via V2I interfaces (ex. red light control).

The shuttles used in the AVENUE project technically can achieve speeds of more than 60Km/h. However this speed cannot be used in the project demonstrators for several reasons, ranging from regulatory to safety. Under current regulations the maximum authorised speed is 25 or 30 Km/h (depending on the site). In the current demonstrators the speed does not exceed 23 Km/h, with an operational speed of 14 to 18 Km/h. Another, more important reason for limiting the vehicle speed is safety for passengers and pedestrians. Due to the fact that the current LIDAR has a range of 100m and the obstacle identification is done for objects no further than 40 meters, and considering that the vehicle must safely stop in case of an obstacle on the road (which will be “seen” at less than 40 meters distance) we cannot guarantee a safe braking if the speed is more than 25 Km/h. Note that technically the vehicle can make harsh break and stop with 40 meters in high speeds (40 -50 Km/h) but then the break would too harsh putting in risk the vehicle passengers. The project is working in finding an optimal point between passenger and pedestrian safety.



## 1.1 Preamble

WP5 aims at the development and integration of the global service platform, which is a key central element of the project.

Beyond the technical aspects of this work package, it is important to note that the rules of each PTO's, but also the rules and objectives of the territories funding the mobility services have a crucial impact on the implementation of these services. Indeed, it is easy to imagine how each PTO's could orient its work according to the different local political wills. Autonomous shuttles could, for example, be a major focus of a policy dedicated to vulnerable people and/or people with reduced mobility. Such a policy would require PTO's to define specific priority rules for these people, and also to develop specific features related to accessibility in the vehicles.

If, on the other hand, the local policy is geared towards the development of low-carbon public transport, autonomous shuttles could become a powerful tool for connecting to the main lines of a public transport network, such as the metro or tramways.

In these two examples, a set of decisions will result from this policy vision, which will impact service commitments, pricing, and will have a strong impact on the specifications that PTO's will impose on fleet management tools.

At this stage of technology development, each PTO is positioning itself according to the objective for autonomous shuttle services, but also according to the technologies currently available, while maintaining the need for integration with other mobility offers.

## 2 Politics of PTO's

The creation of a policy for the management of autonomous vehicles in the context of public passenger transport is necessary for each transport operator. Each operator should establish guidelines for the desired operation of autonomous vehicle services:

- integrating the necessary inputs to ensure consistency between the service offered and the local specificities.
- by providing answers to some key questions for the operation of a service with autonomous vehicles (target, price, access modalities, reaction in case of malfunction).

A transport policy must also allow users to benefit from a support that allows them to obtain all the information, notably legal, on the service that is offered. This policy, aimed at the general public, must reflect the PTO's ambitions and be derived from the local policy applied to public transport.

In order to implement the different policies, each PTO's will describe here the local mobility policy, and how autonomous shuttles can be integrated into it.

The PTO's will then describe how this policy can be used to provide a concrete service to potential users.

### 2.1 Lyon

Public transport is an activity mainly dependent on local authorities. Indeed, they are the ones who set the guidelines for the development of urban transport networks, and who determine the investment capacities in the different modes of transport. In this context, it is important to note that the policy of developing autonomous vehicles in public transport must be shared with the authority organizing mobility in a territory. It is this coordination that will allow for a perfect integration of autonomous vehicles in the already existing transport networks. Thus, several criteria will be able to influence development choices. For example:

- The vision of the local authority on the best possible use of this new mode of transport (example : low-density peri-urban area to irrigate towards a strong line of the public transport network, city center and rich district to offer premium services with higher fares,...).
- The economic model of the transport network, and the share of the local authority's subsidy on each of the journeys made.

#### 2.1.1 General local policies in Lyon

Public transport is naturally conducive to sustainable development: it contributes to maintaining good air quality. SYTRAL is pursuing an ambitious and proactive policy in the fight against pollution. Today, 75% of journeys on the TCL network are made on electric transport (metro, tram, trolleybus) and generate only 3% of air pollution. By 2025, this proportion will rise to more than 80%.

The general context:

- The Law on Energy Transition for Green Growth (LTECV) : passed in July 2015 requires transport authorities to purchase 50% of "low-emission" vehicles from 2020 and 100% from 2025.

- The new Climate Air Energy Territorial Plan (PCAET) for the Lyon metropolitan area: By 2020, it forecasts a 20% reduction in greenhouse gas emissions, a 20% reduction in energy consumption and a 20% share of local renewable energy.
- The Urban Travel Plan (PDU): Managed by SYTRAL, it is an essential strategic tool in terms of travel. The objectives between now and 2030 are to significantly increase the modal share of journeys by public transport (22%), walking (35%), cycling (8%) and to reduce car journeys (35%).

A partner since 2011 of the Territorial Climate Air Energy Plan, SYTRAL is anticipating the law on energy transition by 5 years by starting a vast project to renew, overhaul and improve its vehicles. To carry out this project, SYTRAL has undertaken several tests and experiments between 2013 and 2017 to assess the risks and opportunities, strengths and weaknesses of the new clean bus solutions.

The objectives are as follows:

- Acquire better technologies adapted to the network for tomorrow's mobility
- Ensuring an optimal economic strategy
- Sustainable fight against air pollution

To implement this air quality improvement plan, the SYTRAL is based on several major axes

## 2.1.2 KEOLIS LYON

Transport on demand is a new mobility service that is developing on the TCL network. As such, different services are being developed, with different objectives. It is therefore important to note the distinction between policies:

-Transport on demand carried out by light vehicles (- 9 seats),

This on-demand transport is now being considered for commuting in peri-urban areas. It is a suitable means of transport in areas covering a wide perimeter and which does not benefit from a direct connection with a line forming part of the TCL network.

- On-demand transport by autonomous vehicles.

Considering that the capacities of the shuttles are the same as the current ones, with the possibility of taking the operator out of the vehicle, we want this type of vehicle in relatively restricted areas. On-demand transport with autonomous vehicles is interesting in areas with a high density of small flow generating poles throughout the day. It is a means of carrying out short journeys within a given area, and also of connecting passengers to a structuring line of the TCL network.

This document deals with all the modalities applicable to on-demand transport using autonomous vehicles.

### 2.1.2.1 Description of how the service works

- Getting around wherever you want from a centre of attraction in the OL Valley

- Joining an OL Vallée attraction centre from one of the points of connection to the TCL network (T7, T3))
- To reach one of the TCL network connection points (T7, T3) from the service area

The service is completely free of charge and available to all (except minors not accompanied by a legal representative).

#### **2.1.2.1.1 Book your journey with the new Mobile Thinking/Bestmile service whenever you want!**

- Order your journeys 15 minutes before your departure or up to 4 weeks in advance!
- Choose your departure or arrival time slot
- Enter your departure and arrival address (or select them on the map)
- Receive a proposal for a timetable, pick-up point and drop-off point (TCL network stopping point or TCL ON-DEMAND meeting point)
- Confirm your reservation
- If you are travelling in a group, remember to state this when you make your reservation. An automatic check of the number of people on board is carried out before each departure, the shuttle will not depart if you board more people than you have booked.
- Do you have any problems with the application, or just want to book your trip by phone, call the Allo TCL services.
- All routes can be shared with other travellers.
- The arrival time indicated on the application is an estimate and may change according to travel requests.
- The proposed trips are made according to the availability of seats. No stand-up passengers are allowed in the autonomous shuttles.

#### **2.1.2.1.2 Book from a digital terminal at the reception desk of the place you are visiting.**

- At the entrance to your place of visit, you will find a digital terminal which will offer you the possibility of reserving a vehicle.
- The estimated waiting time will be indicated to you.
- Validate your journey.
- Wait for the autonomous shuttle to come and pick you up in front of the entrance to the building.

#### **2.1.2.2 What happens on the day of your trip?**

- You will receive a reminder of your reservation one hour before the day of your trip. Remember to cancel it if it is no longer required.
- You will receive a message 15 minutes before the start of the reserved time slot, confirming the exact time of your trip and the pick-up location.
- Please arrive at your departure point 2 minutes before your scheduled departure time. The autonomous shuttle is on schedule! Don't miss it!
- When the vehicle arrives, wave to the driver and identify yourself to him to confirm your pickup.

### 2.1.2.3 Service commitment

- We guarantee travellers a travel time in line with + 10mn maximum with the estimate of the application.
- If the delay is more than 10 minutes, the cost of the trip may be reimbursed under the punctuality guarantee (claim to be made on the application).
- If the delay is longer than 10 minutes, the claim cannot be made if the delay is caused by external reasons, which cannot be controlled by the operator (road works, accidents, traffic jams, malicious acts, weather, etc.).
- In the event of a technical problem, a team will intervene on site in less than 15 minutes.
- In the event of a malfunction, incident or for any urgent reason, the passenger can press the "emergency" button to be put in contact with a security operator.

### 2.1.2.4 Operating regulations

It should be noted that the Autonomous On-Demand Vehicle Service is complementary to the regular TCL network service. Thus, connections that can be made directly with one or more regular lines of the TCL network (all modes combined) are not covered by the Service and are therefore not open to reservation. The T7 - T3 Décines - Grand Large link will therefore not be offered for booking.

The main purpose of the Mobile Thinkink KEOLIS - SYTRAL applications (hereafter the "Applications") is to book transport on demand in the Groupama Stadium area on the demand concerned. The Applications, produced by the company Mobile Thinking, are commercially managed by KEOLIS Lyon.

#### 2.1.2.4.1 Hours of operation

To be defined

#### 2.1.2.4.2 Transport tariff

As long as transport services using autonomous shuttles are carried out on an experimental basis, access to the service will remain completely free of charge.

#### 2.1.2.4.3 Cancellation of Service

It is possible to cancel a reservation up to 15 minutes before the pick-up time via the application. In the event of repeated cancellations or absence at the agreed time and address, the User is liable to a penalty defined as follows:

Following two absences at the place and time of booking, a written warning will be sent to the User (by SMS, e-mail and/or post).

As of the third absence at the place and time of booking, the User's account will be suspended for a period of one month and access to the Service will be suspended.

After three account suspensions, definitive exclusion from the Service will be pronounced.

#### 2.1.2.4.4 Conditions of carriage for minors

The Service is not available to minors who are not accompanied by a legal representative or a responsible adult.

Any User who cannot justify his/her age must leave the vehicle without delay. Failure to do so will be considered as voluntarily preventing the vehicle from leaving, obstructing traffic, which will expose it to all applicable penalties.

His responsibility or that of his legal guardians may be sought if his behavior has caused any damage. As this is a public transport service and in accordance with the regulations in force, the use of an approved restraint system for minors under 10 years of age (e.g. booster seat) is not obligatory. Where applicable, baby seats must be provided by the Users.

#### **2.1.2.4.5 Stopping the vehicle and reporting the User**

Except in exceptional cases or measures, the vehicle stops at the locations identified for the pick-up and/or drop-off of Users using the Service, as initially indicated in the context of the Service reservation on the Applications and after the driver's assessment of the feasibility of the pick-up and/or drop-off at the location in question.

Users wishing to board the autonomous vehicle must be at the place and time indicated at the time of booking the Service - if possible a few minutes before the indicated time - and are requested to signal by reaching out their arms out frankly.

The drop-off point, which is defined in advance at the time of booking the Service on the Applications and which cannot, except in exceptional cases or circumstances, be changed during the journey, must be verbally reminded to the security operator on board the autonomous shuttle when boarding the vehicle. The latter reserves the right to decide how to get off at the place in question, in order to allow the autonomous shuttle to have time to slow down and stop the vehicle safely and without inconvenience to other passengers and third parties, but also to guarantee the safety of the passengers during the descent. If the above-mentioned conditions are met, the driver will inform the User so that the User can prepare for the descent. The descent must take place through the door of the vehicle dedicated for this purpose, and the User must get out and leave the drop-off point without delay.

#### **2.1.2.4.6 Compliance with the rules**

The provisions of the Decree on public regulations for the operation and regulation of the police and transport security on the lines of the TCL network, available on the following link <https://www.tcl.fr/sites/default/files/2019-10/Extrait-du-r%C3%A8glement-conseils-voyageurs-2019.pdf>, as well as the specific provisions of Title 11 relating to the experimental scheme "Transport on demand of the TCL network" apply within the framework of the use of the Service as well as on board the vehicles relating to it.

Thus, the fact that a person is in the TCL vehicles dedicated to the declared experimentation of the Transport on Demand Service, implies acceptance of the general regulations plus these specific provisions and compliance, in all circumstances, with the prescriptions that it determines.

Failure to comply with these obligations, where necessary reinforced or supplemented, on a one-off or permanent basis, by decision of the public authorities, in particular in the context of security measures, constitutes an infringement of these regulations and is subject to all applicable penalties, including temporary or definitive prohibition of access to the Service.

#### **2.1.2.4.7 Behavior inside the vehicle [excerpts from the TCL network regulations].**

It is compulsory to wear a seat belt inside the vehicle. The User is required to adopt decent dress, language and behavior, and in particular is prohibited:

- to get into the vehicle without having first booked the Service through the Applications, or to get into the vehicle in violation of the "complete" indication given by Keolis Lyon staff.
- not to present themselves at the place and time of the scheduled reservation, unless they have cancelled the transport request in accordance with the terms and conditions of the Service.
- to hinder the ascent or descent of other Users;

- to hinder driving, to obstruct the closing of the vehicle access doors or to open them after departure while the vehicle is in motion and before the vehicle comes to a complete stop;
- to interfere in any way whatsoever with public order, understood as any attack on public safety, health and tranquility, caused by his behavior, the persons for whom he is responsible and anything or animal in his custody. The agents of Keolis Lyon reserve the right to assess such an infringement.
- to enter the vehicle with drinks in cups that may be spilled when braking or jostling;
- to soil, damage or deteriorate the rolling stock and installations of any kind as well as the various signs, inscriptions or posters they contain, to put one's feet on the seats;
- to abandon or throw into the vehicle any papers, newspapers, packaging, cups, bottles, residues and rubbish of any kind which may be detrimental to the hygiene and cleanliness of the vehicle or which may cause the vehicle to malfunction or cause accidents;
- begging in the vehicle;
- smoking, vaporizing, or using electronic cigarettes or any other cigarette substitute device causing discomfort to third parties, the discomfort being at the sole discretion of the TCL agents in the vehicle;
- spitting in the vehicle, urinating or damaging or defiling the vehicle in any way;
- to use any alarm or security device that may be installed inside the vehicle without legitimate reason;
- to make use, without authorization, of sound devices or instruments, or to disturb the peace and quiet of others by noise or disturbance;
- to distribute leaflets, to solicit the signing of petitions; to engage in any kind of propaganda, to disturb the peace of the Users in any way whatsoever;
- begging, offering for sale, selling anything, engaging in any kind of advertising and putting up posters, drawings or inscriptions in the vehicle;
- to make sound recordings, to take photographic or cinematographic shots, to take pictures of TCL personnel, of the vehicle, unless a special authorization has been issued by TCL,
- to enter or remain in a state of manifest intoxication in the vehicle, to sell and consume any alcoholic beverage;
- to impose on a person any sexual or sexist remark or behavior which either violates his or her dignity because of its degrading or humiliating nature or creates an intimidating, hostile or offensive situation against him or her.

In any case, travelers are in all circumstances obliged to comply with the injunctions of Keolis Lyon staff. The offender is liable to the applicable legal or regulatory sanctions.

Persons who persist in preventing the normal operation of the Service or who, by their dress or behavior, risk disturbing or causing a disturbance to public order inside a vehicle dedicated to the Service, must leave the premises if requested to do so by Keolis Lyon staff.

In the event of offences being observed, the perpetrator is liable to the penalties provided for by law and regulations. In the event of failure to comply with the provisions set out in this section, Keolis Lyon declines all responsibility in advance for any accidents or damage which may result from this.

## 2.1 Geneva

Switzerland, officially the Swiss Confederation, is a federation of 26 cantons. Swiss cantons can be considered to having an independent government and are an administrative subdivision of the Swiss Confederation.

Municipalities are the lowest level of administrative division in Switzerland. Each municipality is part of one of the Swiss cantons, which form the Swiss Confederation.

Swiss authorities are having a positive attitude towards the development of future transport modes and entirely support initiatives such as fully automated driving and connected vehicles.

Fully automated vehicle projects are approved, coordinated and supervised by:

- Federal Routes Office
- Federal Transport Office
- Transport department of the Canton of Geneva

### 2.1.1 General local policies in Geneva

The Department of Infrastructure of the Canton of Geneva outlines the public transportation strategy and policies for a four year period (2020-2024) as well as long term up until 2030 and 2050.

The core subject until 2030 consists of the electrification of the public transport fleet in order to protect the environment. The implementation of fully automated vehicles is not specifically mentioned as such but fits in with the objectives to extend the public transport offer in terms of mobility services.

### 2.1.2 TPG

Transport Publics Genevois (TPG) is the public transport operator of reference in the Geneva region. Their mission is to contribute to the management of mobility in the Canton of Geneva, Switzerland by proposing to the public a quality offer in accordance with the principles of sustainable development. Involved in innovation, they are active in the field of electric, on-demand and fully automated transport.

Within the AVENUE framework, the TPG runs two test sites:

- Xa-Line in the community of Meyrin
- Belle-Idée site in the community of Thônex

The Xa-Line has been initiated by the TPG in 2017 and is integrated within the AVENUE project in order to be able to exchange experiences. Both test sites are located in the Canton of Geneva, Switzerland

	Xa-Line	Belle-Idée
Community	Meyrin	Thônex
Funding	TPG	EU + TPG
Start date project	01.08.2017	01.05.2018
End date trial	31.01.2021	--



Type of route	Fixed circular line	Area
Distance	2.1 [km]	38 [hectare]
Road	Open road	Semi private
Type of traffic	Mixed	Mixed
Speed limit	30 [km/h]	30 [km/h]
Roundabout	Yes (between track and depot)	Yes
Traffic lights	No	No
Type of service	Traditional busline	On demand
Concession	Line	Area
Number of bus stops	4	75
Type of bus stop	Fixed	Fixed
Bus stop infrastructure	Yes	Sometimes, mostly not
Number of vehicles	1	3-4
Timetable	Fixed	On demand
Operation hours	Monday-Friday (5 days)	Sunday-Saturday (7 days)
Timeframe weekdays	06:30 - 08:30 / 16:00 - 18 :15	06:00 – 19:00
Timeframe weekend / holidays	No service (from June 2019)	06:00 – 19:00
Depot	At 400 [m] distance	On site
Driverless service	No	2021

The below mentioned policies are based on a fully automated on-demand service as proposed on the Belle-Idée test site.

### 2.1.2.1 Description of how the service works

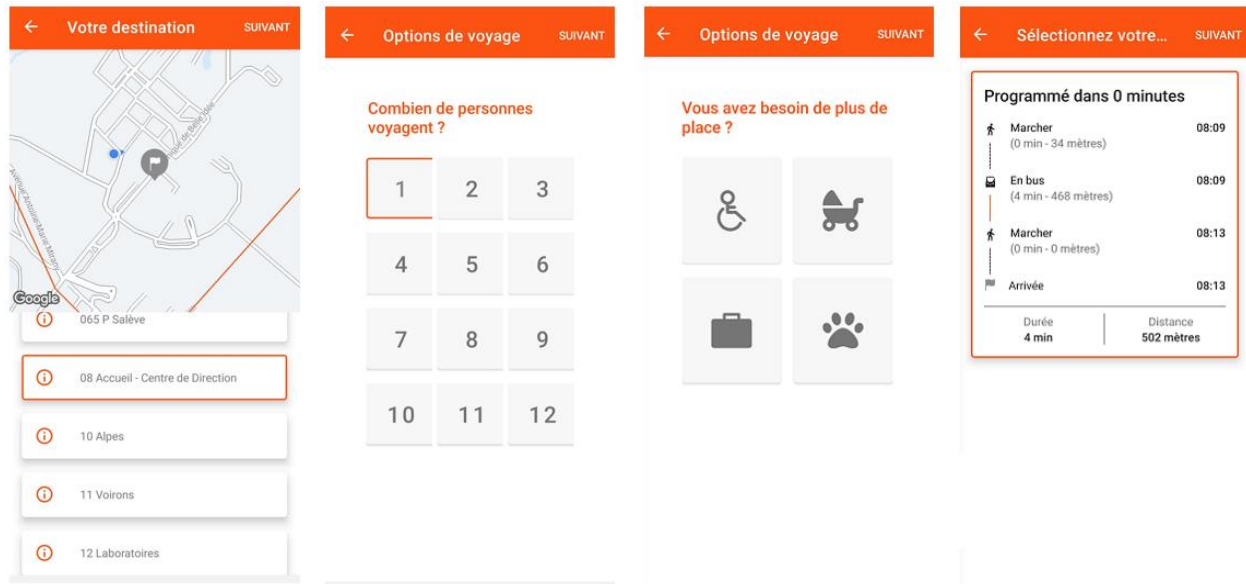
The Belle-Idée project offers a fully automated, on-demand, door2door, dynamically routed, public transport service with three vehicles being available all day long. Hence, passengers have access to an almost personalized means of transport via 75 mostly virtual (bus) stop points on the 38 acres estate.

Direct as well as pre bookings can be made via a dedicated application while the on-demand orchestration system determines the optimal routing and sends out a vehicle to transport the client.

The only human interaction within the system is the client who uses the application to make a booking.

NB: vehicles are supervised at distance and due to the current legal framework, a safety operator is always present in every vehicle.

### 2.1.2.1.1 Book your journey Mobile Thinking/Bestmile service



The screenshots show the following steps in the app:

- Votre destination**: A map view with a list of destinations below it: 065 P Salève, 08 Accueil - Centre de Direction, 10 Alpes, 11 Voirons, 12 Laboratoires.
- Options de voyage**: A screen asking 'Combien de personnes voyagent ?' with a numeric keypad (1-12) and icons for a wheelchair, stroller, suitcase, and pet.
- Options de voyage**: A screen asking 'Vous avez besoin de plus de place ?' with the same icons as the previous screen.
- Sélectionnez votre...**: A screen showing the final itinerary: 'Programmé dans 0 minutes', 'Marcher (0 min - 34 mètres) 08:09', 'En bus (4 min - 468 mètres) 08:09', 'Marcher (0 min - 0 mètres) 08:13', 'Arrivée 08:13'. It also shows 'Durée 4 min' and 'Distance 502 mètres'.

- Open up the Mobile Thinking Application
- Select a destination (either list based or via a map)
- Select your pick up place (only change if this is not your current location)
- Select the number of passengers
- Select carry-on luggage (only if necessary)
- Confirm the proposed journey which matches your criteria
- The shuttle is on its way to pick you up

Passenger feedback allows the development of future added Application and Orchestration functionality.

### 2.1.2.1.2 Other ways to book

Although it has been considered to provide other ways of booking such as a web interface and telephone helpdesk, at the start of the project it is currently only foreseen to book a vehicle by using the application.

### 2.1.2.2 What happens on the day of your trip?

#### Direct bookings

- See 3.1.2.1.1

#### Pre bookings

- Book as a direct booking
- You will receive a reminder of your reservation confirming time and pick-up location

### 2.1.2.3 Service commitment

We will probably guarantee an arrival to destination time which is 150% of the actual travel time. This leaves a 50% margin in the event of a delay or in order to reroute the vehicle due to a ride pooling request.

### 2.1.2.4 Operating regulations

Even if the Belle-Idée site needs to be considered experimental, the project is part of the regular TPG public transport network and specific procedures with regards to fully automated vehicles have been put into place.

- Operational conditions (speed, weather conditions, number of passengers, supervision time, etc)
- List of minimum required equipment (e.g. operations of specific subsystems or applications)
- Vehicle operating checklist
- Emergency procedures

Niveau de gravité	Cadre général	Impact de l'évènement			
		Humain	Matériel	Médiatique	Opérationnel
0	Pas de perturbation	aucun	aucun	aucun	aucun
1	Gêne, perturbation	négligable	négligable	négligable	moyen
2	Incident / accident léger	faible	faible	faible	fort
3	Accident grave	important	important	important	majeur
4	Accident mortel / catastrophe	majeur	majeur	majeur	paralysant

Emergency procedure

#### 2.1.2.4.1 Hours of operation

Monday to Friday from 06:00 to 19:00 with future extensions within the Avenue project during weekend and evening hours.

#### 2.1.2.4.2 Transport tariff

The Belle-Idée fully automated vehicles service is subject to free travel within the framework of the Avenue project.

#### 2.1.2.4.3 Cancellation of Service

To be defined

#### 2.1.2.4.4 Conditions of carriage for minors

Minors are allowed to be transported without adult surveillance

#### 2.1.2.4.5 Stopping the vehicle and reporting the User

To be defined

#### 2.1.2.4.6 Compliance with the rules

General TPG policies do apply (DRT-TPG)

[https://www.tpg.ch/sites/default/files/2020-11/Drt-tpg\\_adaptations\\_etat\\_au\\_13\\_decembre\\_2020.pdf](https://www.tpg.ch/sites/default/files/2020-11/Drt-tpg_adaptations_etat_au_13_decembre_2020.pdf)

#### 2.1.2.4.7 Behavior inside the vehicle

**Ticketing (currently not applicable)**

Passengers must obtain a valid ticket before boarding. The ticket must be kept until the end of the journey. The ticket machine on board the vehicle can only be used in the event of the absence or unavailability of a fixed machine at a stop. In case of machine failure, please inform the driver. All purchases through another channel must be made before boarding. If a traveler cannot purchase a ticket via any of the distribution channels offered by tpg (especially if the ticket machines are out of service), he/she must immediately inform the driver upon boarding the vehicle. He/she purchases a ticket at the next station equipped with a ticket machine. Passengers without a valid ticket will have to pay a surcharge. Any offender may be denied access to the tpg network or be forced to leave a vehicle in the tpg network at the request of mobile staff or security personnel. Security personnel may at any time, in vehicles or near stops:

- interrogate individuals and check their identity documents;
- stop, check and exclude from transport vehicle

**Reduced mobility**

Wheelchairs and strollers are allowed at no extra cost. They must be immobilized and monitored by the traveler and must not interfere with the entries and exits on the vehicle.

**Carry-on luggage**

Bicycles (including electric bicycles) can be transported, if space permits, at a reduced rate. Scooters can be transported free of charge, if space permits. Dogs can be transported at a reduced rate. Small animals placed in a properly closed container may travel free of charge. Legal provisions apply to dogs that are considered dangerous.

**Health measures**

Travelers must at all times respect the health measures, such as wearing a mask, set in place by the competent authorities so long as they remain in force. This rule overrides any provisions or behaviors that prevent compliance with these measures during travel. In this context, consuming any food and/or beverages on board tpg vehicles is strictly forbidden.

## 2.1 Luxembourg

Luxembourg is a small European country, surrounded by Belgium, France and Germany. It's mostly rural, with dense Ardennes forest and nature parks in the north, rocky gorges of the Mullerthal region in the east and the Moselle river valley in the southeast. Its capital, Luxembourg City, is famed for its fortified medieval old town perched on sheer cliffs

Pfaffenthal :

Pfaffenthal is a small urban living area located in Luxembourg City, the capital of Luxembourg. This urban area with 1270 inhabitants is located in a valley between the historical center of Luxembourg City and Kirchberg, the business district of Luxembourg City.

Test Site Contern :

Contern is a city located around 10 km east of Luxembourg city. An industrial zone with different companies has been implemented on its territory. A railway station as well as a stop for public buses are located on the border of the industrial zone. However, no public transport is entering the industrial zone of Contern.

Replicator Site : Esch sur Alzette

Esch-sur-Alzette is with 35.000 inhabitants from more than 120 nationalities the second most populated town in Luxembourg and is located on the border to France in the South of the country around 17 km away from the capital Luxembourg-City. Esch-sur-Alzette has a lively past with the development of the steel industry in Luxembourg. In the end of the 19th and in the first half of the 20th century many mines and blast furnaces were located in and around Esch-sur-Alzette and contributed to the economic growth of Luxembourg. As a result of the steel crisis in the 1970s the steel production went continuously down in Luxembourg and the infrastructure was left behind. In recent years, Esch-sur-Alzette is giving a new life to the former industrial sites, Esch-Belval and Esch-sur-Alzette-Schifflange by transforming them into innovative urban living and working areas where industrial heritage, modern administrative and residential buildings coexist in perfect harmony. During the last years more and more technology companies, start-up incubators, medical laboratories, insurance companies, research institutes, banks and advertising agencies are settling on this site. Furthermore, four residential areas and two educational institutions are located in this area. Currently 80 different companies settled in this area, many more are to come because the site is still under full development and is getting a considerable reputation among companies. In future 7.000 residents and 20.000 employees, university and high school students and researchers will be located on this site. The transformation of the former steel production site of Esch-sur-Alzette Schifflange is still under development and will begin in the coming years. These innovative and ambitious projects will play a major role in improving the regions' quality of life. Innovative mobility solutions to connect the centre of Esch-sur-Alzette, Esch-Belval and the former industrial site of Esch-Schifflange will be essential to guarantee accessibility to all kinds of people from different socio-economic groups to the different sites.

Furthermore, Esch-sur-Alzette is carrying the title **“European Capital of Culture 2022”**. Eleven municipalities (known as the ProSud alliance) and 8 municipalities (CCPHVA, Communauté de communes du Pays Haut Val d'Alzette) from the French border are also involved in the “European Capital of Culture 2022”. A cooperation with the city of Kaunas in Lithuania, which will be cultural city in 2022 as well, are also planned.

Autonomous Shuttles vehicles projects are approved, coordinated and supervised by:

MMTP (Ministère de la Mobilité et des Travaux publics)

## 2.1.1 General local policies in Luxembourg

The Department of Mobility and Transport (*Département de la mobilité et des transports*) is part of the Ministry of Mobility and Public Works, which is under the authority of François Bausch, Minister for Mobility and Public Works.

This department is responsible for all questions related to the different national modes of transport or those transiting through the Grand-Duchy of Luxembourg. The department is divided into different heads in which lie the competences for the modes of transport and other cross-cutting issues related to transport.

The government seeks to ensure that addressing mobility bottlenecks for both professional and leisure activities is made a top priority.

The sustainable mobility strategy (Modu 2.0) serves as a set of guidelines, which need to be further developed and implemented, for this purpose.

The aim is to ensure good public transport coverage and to factor in active mobility in the planning stage of all road and rail infrastructure projects, public buildings, new housing developments, leisure facilities and shopping centers. Targeted management of parking areas will also be introduced.

In this context, following the strategy Modu 2.0, a national mobility plan will be elaborated and adapted to the needs and demands projected for horizon 2035.

In order to gather the necessary data for mobility planning in an efficient and continuous way, adapted to the constant evolution of needs, a mobility observatory will be put in place.

## 2.1.2 Saltz-Lentz

The family company Sales-Lentz was founded in 1948. Today, it is still owned by Marc and Jos Sales, partners of the Sales-Lentz Group.

With a fleet of over 650 vehicles, Sales-Lentz owns the largest private fleet in Luxembourg and the Greater Region. The company's operations cover the following areas: public transport, school transport, airport transfers, group travel (by coach) and customised transport solutions for individuals and businesses. Through the years, Sales-Lentz also made a name for itself in the field of events by providing shuttle services at major events (e.g. ING Marathon, Rock-A-Field, Blues Express, concerts, 2012 royal wedding).

Another cutting edge in Sales-Lentz's corporate culture is corporate social responsibility (CSR), which aims to contribute to sustainable development, a business philosophy that takes into account the economy as well as environmental and social factors.

Sales-Lentz's late history is marked by major investments in electromobility (on-site vehicles and infrastructure) since 2009, in order to be able to meet the growing needs of ecological and sustainable mobility. The Bascharage based company's pioneering spirit has recently been proven again through the introduction of Luxembourg's first autonomous shuttle, emphasizing the prominence of innovation within Sales-Lentz.

### **2.1.2.1 Description of how the service works**

Sales Lentz subcontracted by the City of Luxembourg offers a public transport service in Pfaffenthal and in Contern.

Pfaffenthal :

During the day, local residents, employees and a vast number of tourists are using the multimodal station in combination with the elevator in order to get to the different parts of Luxembourg City. The public elevator and the multimodal station are separated by 500 m and the residential area and the public elevator by 800 m. This corresponds to 5-10 minutes of walking

Contern :

More than 300 employees use the shuttle between a real estate real estate development company called "Campus Contern" with more than 300 employees and the train station

#### **2.1.2.1.1 Book your journey Mobile Thinking/Bestmile service**

This service is not yet available in Luxembourg. Public transport has been free for all users since April 2020. The Transport Ministry in collaboration with the mobility centre wants to draft a procedure concerning the reservations of a service which integrates a service of public transport. The procedure and the way to book a service of a public transport can only be drawn up by the MMTP.

All reservations and services concerning public transport must be integrated into the Mobilitéit.lu application.

The Mobility Centre (Mobilitéitszentral) is the communication platform and shop front of the Public Transport Administration of the Ministry of Mobility and Public Works. Travellers can contact the Mobilitéitszentral about all public transport matters, problems or complaints.

#### **2.1.2.1.2 Other ways to book**

In the next years a transport public service can also be booked via call, email to the "Leetstell".

The "Leetstell" occupies a vast command centre within the Public Transport Administration of the Ministry of Mobility and Public Works, located in Kirchberg. Created in 2018, its purpose is to improve the comfort and all-round experience of public transport passengers.

### 2.1.2.2 What happens on the day of your trip?

To be defined

### 2.1.2.3 Service commitment

These general conditions of the travel contract entered into between the tour operator and the travelling clients relate to the products and travel packages published in this brochure.

All the indications, descriptions and information of this brochure and any possible changes or corrections that may be notified to travellers by their travel agent, are also part of the travel contract between the organiser and the travelling clients. However, the tour operator is not responsible for the texts, descriptions, brochures and flyers of third parties, such as hotel providers and/or local tourist organizations.

Trips published in this catalogue and marked with the logo of another tour operator are subject to the general terms and conditions of that tour operator.

Registration for the trip by the travelling client is part of the travel contract and implies the travelling client's express acceptance of these general terms and conditions and their obligation to comply with them. Oral agreements that are not confirmed in writing are considered null and void. These general terms and conditions also apply to special programmes that are not included in this brochure, subject to specific conditions related thereto.

#### **I. Registration, travel confirmations and travel documents**

**Booking a trip is subject to the acceptance of the terms and conditions of the above-mentioned trip.**

##### **1. Booking and down-payment**

Registration for the trip by the travelling client is carried out in writing, either via the Internet or by e-mail, or by phone or in person with a retailer of the tour operator. After written confirmation from the tour operator, this registration shall bind the tour operator and the traveller. When booking online via the Internet, confirmation of the online travel contract is binding. After registration, the travelling client agrees and undertakes to pay the tour operator a down-payment no later than 7 (seven) days following receipt of the confirmation.

- The deposit to be paid is 30% of the travel price (min. EUR 25). For day trips, the deposit is 100% of the price. For special services (concerts, exhibitions, etc.), the amount of the deposit will be set on a case-by-case basis and indicated on the travel confirmation.
- For last minute bookings, i.e. less than 14 (fourteen) days before the departure date, the full amount of the trip is due.
- Requests "outside a quota" (reservation upon request) are available upon request and are binding following confirmation by the service provider. If there are other participants, the client who made the registration is jointly liable for the contractual obligations of the other participants.

##### **2. Written confirmation**

1. A written confirmation indicating the price and the payments to be made is sent to the travelling client after registration, along with the general terms and conditions of the travel contract. The travelling client is obliged to check the data contained on the travel contract (e.g. travel dates, spelling of names, etc.) and communicate any change from the information they provided to the retailer. The travelling client is also



obliged to disclose the names of the participants according to the information stated on their passport or identity card. Costs may incur as a result of any change made after confirmation of the reservation.

2. About a week before the trip but no later than 4 (four) days before it, each participant in the trip receives a list of hotels through the post along with a specific programme with important and practical information for the trip. The travel confirmation also serves as a travel document. For individual trips, travel documents (flight ticket, hotel voucher, etc.) are available one week prior to departure from the retailer, subject to payment of the balance.

## **II. Travel rates and payment terms**

1. Travel rates only include the services that are specifically listed in the catalogue as part of the price for the various trips. All services that are not included can be booked and paid as a supplement to the retailer or on site.

2. Travel rates include all taxes, fees or remuneration, as well as any possibly due tax.

3. The tour operator reserves the right to REVISE RATES. Price increases that do not exceed 8 (eight) percent of the total trip cost are possible if they are the direct result of an evolution: a) passenger transport prices resulting from the cost of fuel, b) the level of fees or charges on the travel services included in the contract, imposed by a third party who is not directly involved in the execution of the trip, including tourist taxes as well as landing, embarkation and disembarkation taxes in ports and airports or c) the rate of exchange prevailing during the trip or stay in question.

4. A price increase is possible only if the travelling client has been informed thereof in a clear and understandable manner at least 20 (twenty) days before the start of the trip. The notification shall include the amount of the increase, its justification and its calculation.

5. The travelling client is entitled to a price reduction corresponding to any reduction in costs referred to in paragraph 3 (a), b) and c), which occurs after entering into a travel contract and before the start of the trip. In this event, the tour operator is entitled to deduct its actual administrative expenses of the refund due to the traveller. At the request of the travelling client, the tour operator shall provide proof of its administrative expenses.

6. If the tour operator proposes to increase the price by more than 8 percent of the total price of the trip, the traveller may – within 7 (seven) days – accept the proposed change or terminate the contract without having to pay a termination fee.

**DISCOUNTS FOR GROUPS** are given upon specific request.

**DISCOUNTS FOR CHILDREN**, insofar as they are not already mentioned, are also given upon specific request.

All payments must be made on one of the bank accounts printed on the travel confirmation. The balance must be paid 14 (fourteen) days before the start of the trip, but no later than upon receipt of the travel documents.

**THE CLIENT IS REQUIRED TO INDICATE THE REFERENCE NUMBER ON THE WIRE TRANSFER.**

## **III. Tour operator services**

1. All the information contained in the brochure and on the website correspond to the status at the time of printing (July 2018). The tour operator reserves the right to change – if needed – services and prices, and to correct any errors, misprints and miscalculations.

2. The services that are the subject of a contractual agreement are listed, firstly, in the brochure's description of services that became the contractual basis, and secondly, in any information relating to the travel confirmation. The rates shown in the brochure that became the basis of the travel contract are, in principle, binding on the tour operator. Amendments may occur before entering into the travel contract; the travelling client will obviously be notified of any changes as soon as possible before booking. Side agreements, special agreements and special requests must be expressly stated in the travel confirmation; otherwise, they are non-binding on the tour operator.

#### **IV. Amendment, termination or cancellation of the travel contract**

##### **Before the departure**

##### **Transfer of the travel contract from the travelling client to another traveller**

1. Provided that the travelling client informs the tour operator in writing with at least 7 (seven) days' notice before the start of the trip, the travelling client has the right to transfer the travel contract to a person who meets all the conditions applicable to the travel contract.

2. The transferor and transferee are jointly liable for the payment of the trip as well as the costs, charges and potential additional costs arising from such a transfer. These amounts are to be paid to the tour operator/retailer. Application fees amount to at least EUR 25 per person.

3. The tour operator reserves the right not to accept such a transfer if the transferee does not fulfil the conditions and obligations of the travel contract.

##### **Minor change to the travel programme made by the tour operator**

The tour operator reserves the right to make minor travel programme changes. In this event, the travelling client shall be notified of such changes as soon as possible prior to the trip.

##### **Amendment of an essential part of the travel contract by the tour operator**

1. If, before the trip, the tour operator is obliged to make significant amendments to one or more of the main features of the travel contract or if the tour operator proposes to increase the price of the trip by more than 8 percent, the tour operator shall notify the travelling client thereof within 3 (three) days. In the same lapse of time, the tour operator informs the travelling client in writing, that they have the right to accept the proposed change or terminate the travel contract within 7 (seven) days without paying termination fees and to notify the tour operator of their choice. Upon termination of the travel contract, the tour operator may also offer replacement services of equal or superior quality to the travelling client. The absence of a response from the travelling client within the deadline shall be deemed to be a tacit acceptance of the amendment proposed by the tour operator.

2. If the amendment of the travel contract or the replacement services lead to lower quality and cost, the travelling client will be entitled to an appropriate discount.

3. If the travel contract is terminated by the travelling client in accordance with the above and they do not accept replacement services, the tour operator shall refund all payments made by the travelling client within 14 (fourteen) days following the termination of the travel contract.

##### **Termination or cancellation of the travel contract by the travelling client**

The travelling client may cancel the travel contract at any time before the start of the trip.

The tour operator shall supply evidence of the amount of the cancellation fee if requested by the traveller.

If the travelling client cancels the travel contract, the following cancellation fees shall apply:

1. Upon cancellation of COACH TRAVEL reservations, the following cancellation fees shall apply:

If cancelled up to 30 days before departure: 15% of the fixed price, minimum EUR 15 per person.

If cancelled between the 29th and the 15th day before departure: 30% of the fixed price.

If cancelled between the 14th and the 6th day before departure: 50% of the fixed price.

If cancelled between the 5th day and the day before departure: 75% of the fixed price.

Cancellation or no-show on the day of departure leads to a cancellation fee in the amount of 100% of the fixed price.

2. Upon cancellation of AIR TRAVEL reservations, the following cancellation fees shall apply:

If cancelled up to 60 days before departure: 15% of the fixed price.

If cancelled between the 59th and the 45th day before departure: 30% of the fixed price.

If cancelled between the 44th and the 14th day before departure: 50% of the fixed price.

If cancelled between the 13th and the 4th day before departure: 75% of the fixed price.

If cancelled between the 3rd day and the departure date and in the event of no-show on the day of departure: 100% of the fixed price.

3. Special services such as theatre tickets, musical tickets or tours (such as helicopter flights, New York City Pass, etc.) are non-refundable. The non-use of these kinds of services gives rise to a cancellation fee of 100% of the fixed price.

4. When cancelling a GUIDED TOUR BOOKED INDIVIDUALLY, the following cancellation fees shall apply:

If cancelled up to 30 days before departure: 30% of the fixed price.

If cancelled between the 29th and the 4th day before departure: 75% of the fixed price.

If cancelled between the 3rd day and the departure date and in the event of no-show on the day of departure: 100% of the fixed price.

5. When cancelling a HOTEL SERVICE FROM THE PRODUCT RANGE, the following cancellation fees shall apply:

If cancelled up to 30 days before departure: 15% of the fixed price.

If cancelled between the 29th and the 15th day before departure: 30% of the fixed price.

If cancelled between the 14th and the 6th day before departure: 50% of the fixed price.

If cancelled between the 5th day and the day before departure: 75% of the fixed price.

Cancellation or no-show on the day of departure leads to a cancellation fee in the amount of 100% of the fixed price.

6. Upon cancellation of a CRUISE, the conditions of the ship-owner shall apply. The travelling client must request relevant information from the travel agencies.

7. As part of an individual booking of a hotel or other services outside of a Sales-Lentz trip, the conditions of the service provider or hotel shall apply. The travelling client must request relevant information from the travel agencies.

8. Bookings of scheduled flights are subject to the conditions of the airlines. The travelling client must request relevant information from the travel agencies.

9. Cancellations must be made in writing.

10. Cancellation fees provided for under this Article are not due if exceptional and unavoidable circumstances arising at destination or near it, have major consequences on the performance of the trip or the transport of passengers to said destination. In this event, the travelling client is entitled to a full refund of payments made for the trip but not to any additional compensation.

#### **Termination of the travel contract by the tour operator**

1. The tour operator can terminate the travel contract and fully refund the travelling client for the payments they made, without additional compensation, if: a) the number of people registered for the trip is below the minimum number indicated in the travel contract and the tour operator notifies the termination of the contract to the traveller within the deadline set by the contract, but no later than: 20 (twenty) days before the start of the trip for trips of more than six days; 7 (seven) days before the start of the trip for trips of two to six days; 2 (two) days before the start of the journey for trips of less than two days;

Or

b) the tour operator is unable to perform the contract due to exceptional and unavoidable circumstances and notifies the termination of the contract to the travelling client without undue delay before the start of the trip.

2. In this case, the tour operator shall refund all payments made by the travelling client for the trip within 14 (fourteen) days at the latest after the termination of the travel contract.

3. The travelling client must be informed of the cancellation in writing. Moreover, the travelling client has the choice to accept another travel package of equal or superior quality, without extra charge, instead of getting a refund for the cost of the trip, if proposed by the tour operator.

4. Accompaniment by a guide or companion is guaranteed from a minimum of 15 participants during multi-day and one-day trips, tours with a local guide are as shown in the brochure description.

5. As for a number of participants lower than 15, the tour operator reserves the right to adapt the type of vehicle.

6. The tour operator reserves the right to cancel a trip (even guaranteed) if no participant is reserved at the time of expiry of the quota.

#### **After the departure**

##### **Obligation of the tour operator and non-compliance of the travel service**

1. The tour operator is responsible for the execution of travel services included in the travel contract, regardless of whether these services are to be carried out by the tour operator on its own or via other travel service providers.

2. The travelling client informs the tour operator as soon as possible of any non-compliance found when carrying out a travel service included in the travel contract.
3. If a travel service is not performed in accordance with the package tour contract, the tour operator shall remedy the non-compliance, unless it is impossible or generates disproportionate costs, given the importance of non-compliance and the value of the travel services in question.
4. If the tour operator does not remedy the non-compliance, the travelling client can claim a discount on the price of the trip and appropriate compensation, as provided for in these general terms and conditions.
5. Without prejudice to the exceptions set out in point 3, if the tour operator does not remedy the non-compliance within a reasonable period set by the travelling client, the travelling client may remedy it and demand reimbursement of expenses to the tour operator.
6. When a large share of travel services cannot be provided as planned in the travel contract, the tour operator must provide the travelling client – at no extra cost – with other appropriate services, possibly of equal or higher quality than those specified in the travel contract, for the continuation of the trip, including if the travelling client's return to their departure location is not provided as agreed.
7. When the other services offered give rise to a package of inferior quality than that specified in the travel contract, the tour operator must grant the traveller an appropriate discount.
8. The travelling client may only refuse the other services offered by the tour operator if they are not comparable to what was foreseen in the travel contract or if the discount granted is not appropriate.
9. Where non-compliance significantly disrupts the execution of a trip and the tour operator does not remedy it within a reasonable time frame set by the travelling client, the travelling client may cancel the package holiday contract without paying any cancellation fees and request, as the case may be, a discount, compensation or both.
10. If it is impossible to offer other services or if the travelling client refuses the other services proposed in accordance with point 8, the travelling client shall be entitled, if necessary, to a discount, compensation or both, also without termination of the travel contract.
11. If the trip includes the transport of passengers, the tour operator shall also provide the travelling client with repatriation by an equivalent means of transport, without undue delay and at no extra cost for the travelling client.
12. When due to exceptional and unavoidable circumstances, it is impossible to ensure the travelling client's return as provided for in the travel contract, the tour operator shall bear the costs of the necessary accommodation of an equivalent category if possible for a maximum of 3 (three) nights per traveller. If longer periods are prescribed by the legislation of the European Union on passenger rights applicable to transport concerned for the traveller's return, these periods shall apply.
13. The limitation of costs provided for under paragraph 12 does not apply to disabled people, people accompanying disabled people, pregnant women and unaccompanied minors, or to persons requiring specific medical assistance, provided that the tour operator was notified of their particular needs at least 48 hours before the start of the trip.

**Reduced price and compensation for the travelling client resulting from the non-compliance of travel services**

1. The travelling client is entitled to an appropriate discount for any period of non-compliance of travel services, unless the tour operator proves that non-compliance is attributable to the travelling client.
2. The travelling client is entitled to appropriate compensation from the tour operator for any prejudice suffered due to the non-compliance of services provided. Compensation shall be paid without undue delay.
3. The traveller is not entitled to any compensation if the tour operator proves that non-compliance is attributable to the traveller or to a third party unconnected with the provision of travel services in the travel contract, and is of an unforeseeable or unavoidable nature due to exceptional and unavoidable circumstances.
4. The amount of compensation is limited to three (3) times the total price of the trip. However, this limitation does not apply to personal injury or to damage caused intentionally or negligently by the tour operator.
5. The rights to compensation or a discount provided for in this Article shall not affect the rights of passengers under other European laws or international conventions. Travellers have the right to lodge complaints under this point and the said regulations and international conventions. The compensation or discount granted pursuant to this point and the compensation or discount granted under the said regulations and international agreements are deducted from each other to avoid any overcompensation.

## **V. Liability of the tour operator**

### **1. Liability of the tour operator**

The tour operator is responsible for the provision of contractual services under the travel contract, whether they are provided by it or other service providers.

However, the tour operator may not be held liable if it can prove that the failure or imperfect execution of the contractual provision is based on a circumstance that is the responsibility or fault of the travelling client, which was caused by an unforeseen and unavoidable act of a third party with respect to providing the services agreed in the travel contract or in the event of force majeure.

The tour operator may not be held liable for guilty, illicit and illegal acts of hotel providers and other service companies and their employees and agents prejudicing travelling clients and their wealth.

Any claims of the travelling client against service companies are not the tour operator's area of responsibility.

The tour operator may not be held liable for damage resulting from a cancellation of the trip or stay due to unforeseen circumstances such as war, civil unrest, epidemics, sovereign decision (closure of borders), natural disasters, damages, destruction of accommodation, strikes or other similar events. Additional expenses incurred in such circumstances are borne by the travelling client.

The tour operator is not responsible for excursions, circuits, tours, and entertainment that are not part of the travel programme. Participation in the latter is at the travelling client's own risk.

The tour operator is not responsible for hotel bookings or other services that have been booked directly by the travelling client. Such reservations are not covered by the tour operator in any way.

The tour operator will provide assistance to travelling clients in difficulty by providing them with useful information on health services, local authorities and consular assistance or helping to make long-distance

calls and find other travel services. The tour operator reserves the right to charge such an intervention based on real costs if the difficulty of the travelling client is caused intentionally or negligently.

## **2. Limitations of liability**

The contractual liability of the tour operator is limited to three times the price of the trip. However, this limitation does not apply to personal injury and damage caused intentionally or through negligence.

## **3. Objections**

Any objections should be sent directly to the hotel or the tour operator's local correspondent. In addition, objections must be sent to the tour operator in writing within 14 (fourteen) days after the return. Otherwise, it may be the case that they will not be taken into consideration.

## **4. Exclusion of claims and limitation period**

1. All claims should be asserted in writing within 14 (fourteen) days after the end of the trip specified in the contract and sent to the tour operator's headquarters.

2. Claims made by the travelling client regarding the reservation and the trip itself lapse two years after the end of the trip specified in the contract.

## **VI. Miscellaneous**

### **1. Currencies and formalities**

Travelling clients are requested to bring different currencies of the countries they will go to as part of their trip.

Information regarding formalities for the entry of travelling clients in countries that are part of the trip must be requested from the travel agencies based on the nationalities indicated by the traveller.

Travelling clients are personally responsible for the compliance with provisions regarding visa, customs, currency and sanitary requirements. Travelling clients agree to only make the trip in possession of valid identity documents to cross the border. If this is not the case, any costs incurred by the tour operator as a result of this shall be borne by the clients. Clients are requested to pay attention to the validity of their passport or identity card!

### **2. Luggage**

For coach travel, each travelling client is allowed to carry a suitcase and a bag.<sup>[SEP]</sup> For air travel, transport of free and/or paid luggage is subject to the airline's specific conditions.

### **3. Vaccinations and health regulations**

Travelling clients should check with their doctor or the health authorities of the State regarding mandatory or recommended preventive measures, such as vaccinations and prophylaxis. The tour operator shall not be held liable for the travelling clients' negligence in this respect.<sup>[SEP]</sup>

Before the departure, the travelling client must check the validity of the European Health Insurance card and must, as the case may be, be able to produce the "Caisse Médicochirurgicale Mutualiste" (Medical and Surgical Fund) card and/or the "Luxembourg Air Rescue" card during the trip.

## **VII. Travel insurance and accommodation in the event of impossibility to return**

1. No travel insurance is included in the rates of this brochure. Each participant may take out an individual travel insurance policy when booking. Information relating thereto is available from travel agencies.

2. When due to exceptional and unavoidable circumstances, it is impossible to ensure the timely return of the traveller to the departure location, the tour operator bears the costs of the necessary accommodation of an equivalent category if possible for a maximum of three nights per traveller.



3. If longer periods are prescribed by the legislation of the European Union on passenger rights applicable to transport concerned for the traveller's return, these periods shall apply.

#### **VIII. Financial guarantee and civil liability insurance of the tour operator**

Under the Luxembourg Consumer Code, the services of the tour operator are financially guaranteed by the "Mutualité luxembourgeoise du tourisme", a mutual guarantee cooperative company (registered with the Trade and Companies Register under No. B 63569), whose registered office is located at 7 rue Alcide de Gasperi, L -1615 Luxembourg, tel. +352 439 444 700). Travellers can contact the agency or, as appropriate, the competent authority (Ministry of Economy, 19-21 Boulevard Royal, L-2449 Luxembourg, Tel. (+352) 247 74 700, e-mail: [travel@eco.etat.lu](mailto:travel@eco.etat.lu)) if they are denied access to some services as a result of the insolvency of SLA s.a. (public limited company)

The tour operator's professional liability is covered by the insurance company AXA Assurances Luxembourg S.A. 1 Place de l'Etoile L-1479 Luxembourg.

#### **IX. General points**

1. All the information corresponds to the status at the time of printing in July 2018.<sup>[1]</sup>  
The tour operator is not responsible for any printing errors.
2. The tour operator reserves the right to change prices, services and programmes; this also applies in case of changes caused by possible misprints.
3. The invalidity of certain clauses does not make the travel contract null and void as to its substance.
4. The tour operator is not responsible for the information contained in brochures published by third parties.

#### **X. Jurisdiction**

Luxembourg courts have exclusive jurisdiction in the event of a dispute.

#### **XI. The tour operator**

S.L.A. s.a.

ZAE Robert Steichen

4, rue Laangwiss

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BP. 39 L-4901 Bascharage

Tel.: 266 511 Fax: 266 51 4388

[info@sales-lentz.lu](mailto:info@sales-lentz.lu)

Internet: [www.sales-lentz.lu](http://www.sales-lentz.lu)

Company Registration No. LU 16358907

Luxembourg Trade & Companies Registration No. B49878

### **2.1.2.4 Operating regulations**

<http://legilux.public.lu/eli/etat/leg/rmin/2020/02/06/a94/jo>

#### **2.1.2.4.1 Hours of operation**

Contern: Monday - Friday 07h00-09h00 & 16h00-19h00



Pfaffenthal: Tuesday & Thursday 12h00-16h00 & 16h45-20h00  
Saturday, Sunday & every public holiday : 10h00-21h00

#### **2.1.2.4.2 Transport tariff**

Free (all public transport in Luxembourg is free of charge since April 2020)

#### **2.1.2.4.3 Cancellation of Service**

To be defined

#### **2.1.2.4.4 Conditions of carriage for minors**

Anybody can use public transport. Children under the age of 4 must be accompanied by a person who is at least 12 years old. Otherwise they are not allowed on public transport

#### **2.1.2.4.5 Stopping the vehicle and reporting the User**

To be defined

#### **2.1.2.4.6 Compliance with the rules**

See 3.1.2.3 Service commitment

#### **2.1.2.4.7 Behavior inside the vehicle**

As users of public transport, passengers must respect Memorial A -94 of February 24, 2020

<http://legilux.public.lu/eli/etat/leg/rmin/2020/02/06/a94/jo>

## 2.2 Copenhagen

### 2.2.1 General local policies in Copenhagen

The public transport system in the larger Copenhagen consist of multiple PTAs offering different types of transport options. The public transport system consists of metros, busses, flex traffic, city-trains and regional trains (operating in the city). All the transport options have to fall in line with the rules of pricing, uptime, services (for all types of passengers), contact services, maintenance, communications and so forth.

All transport options are tendered through the local municipalities and are public for all to bid on - meaning that all companies compliant with the tenders can offer public transport - as long as the approvals are in order.

With the public transport system set up this way, it also means that passengers in public transport often are in contact with only a few PTAs as they offer all the different transport services either in-house or via subcontractors, like Amobility.

### 2.2.2 Amobility

Amobilitys role in public transport is as a subcontractor to the larger PTAs in Copenhagen. Amobility bids on public tenders, via the PTAs, for a specific transport service in a municipality/area. This also means that Amobility oblige to the below transport policies of the PTA, regarding customer contact, uptime, communications and so forth. Amobility focuses mainly on the actual operation of the shuttles, and the implementation and integration with the PTA (telemetry data, trips, statistics, uptime etc.).

#### 2.2.2.1 Amobility in public transport: being a subcontractor

Amobility has to integrate the services of the shuttles with the PTA enabling them to communicate about the service with their clients and passengers. Holo provides the actual services of the shuttles and then integrates all necessary data and infrastructure with the PTA. The following shows the services provided by Amobility for public PTAs in a public tender for autonomous vehicles in Copenhagen:

- Approval of route
- Approval of vehicle
- Maintenance of the approvals (staying compliant when changes occur)
- Coordinate and execute commissioning and mapping with vehicle vendor
- Hiring and training of operators
- Integration with PTA (data, location etc.)
- Daily operation and troubleshooting of the autonomous vehicles
- Supervision of autonomous vehicles
- Maintenance of autonomous vehicles
- Crisis management of autonomous vehicles
- Daily contact with passengers (customer support and escalation from PTA)
- Documentation and statistics during the project

Booking of trips happens via the PTAs who have the customer ownership and communication. Operational services hours and uptime requirements are set by the PTA. Amobility has the responsibilities defined as a subcontractor in public transport in Copenhagen.

### 2.2.2.2 Customer support

The rules and transport policies inside the shuttle are defined by the PTA in collaboration with Amobility to ensure the best user experience as well as the best possible integration with the PTAs brand, safety profile, customer services levels etc.

Amobility has a customer support line which passengers can use when in doubt, if the request is technically related, Amobilletsity tries to answer to the best possible extent. If the request is targeted towards the public transport service, it is shared with the PTA.

So far in the projects conducted, Amobility safety operators handle most of the customer contact and support, but they have the opportunity to always contact the PTA for further assistance.

### 2.2.2.3 Pricing

For pricing, Denmark has chosen one main option: "Rejsekortet" (the traveler card). The traveler card can be bought anonymously or with a personal subscription. The entire Copenhagen area is divided into zones and the price of travelling between or across zones are the same no matter the transport option used - with small deviations depending on the size of the public investment. All stations and busses are equipped with a stand to register/scan the traveller card.

### 2.2.2.4 COVID-19 special restrictions

We want our riders and operators to stay healthy in our buses. That's why we have initiated strict cleaning procedures, signs for distancing and PPE for our operators in the buses. At the same time we urge you to follow these guidelines:

- Passenger limit: 5 passengers in Denmark and 6 in Norway or 1 wheelchair user with assistance/company.
- Please follow the authorities' recommendations. From August 22nd, it's mandatory to wear face masks in public transportation in Denmark.
- Please do not ride with our buses if you have symptoms or think you may be infected.
- Please be diligent with hand hygiene and distance when traveling in the buses.

### 2.2.2.5 Shuttle guidelines

- Animals  
Animals are welcome on the shuttle as long as there is enough space. It is always the operator who determines whether or not there is enough space for people to bring their animals.
- Food and drinks  
It is not allowed to consume greasy foods (ice cream, chocolate etc.) or alcohol inside the shuttle. You may consume beverages with a screw cap.

## D5.1 Transport management policies' definition

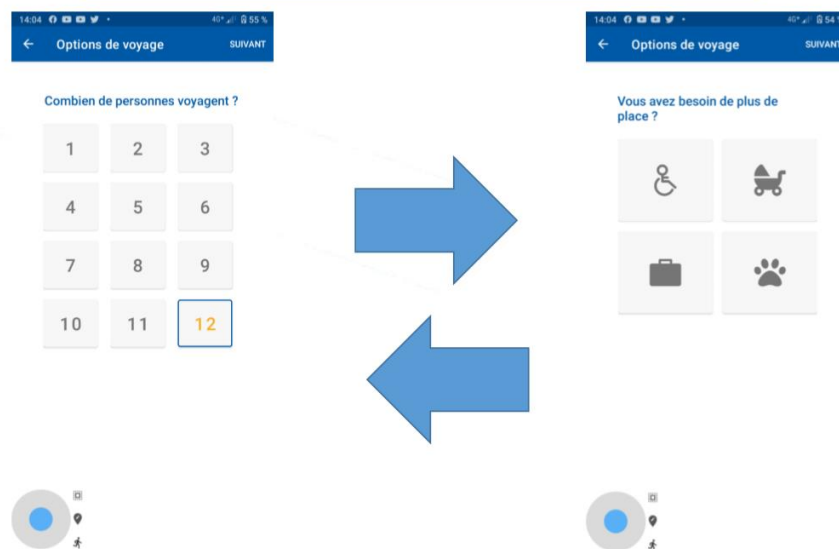
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- Luggage, strollers and prams  
Large luggage, strollers and prams are allowed on the shuttles. Please hold on to your belongings, as hard braking can occur.
- Bicycles and E-scooters  
Bicycles are not allowed on the shuttle as they will take up too much space. E-scooters are allowed, as Holo classifies these as large luggage.

### 3 Conclusion

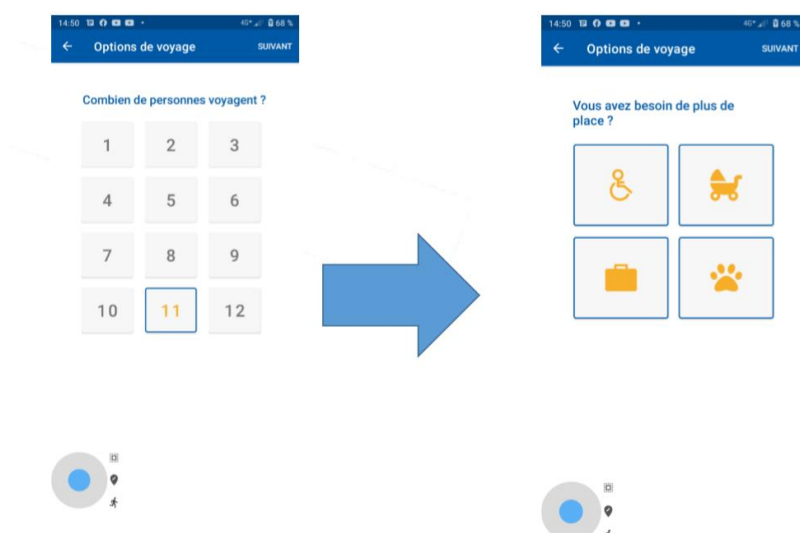
In conclusion, we can see that the different policies of the PTO's are, at present, very close to the policies that can be applied to other public transport modes. Indeed, the mandatory presence of an operator on board, and the unknown future capacities of autonomous shuttles, impose on PTO's a certain proximity to the existing public transport system. Indeed, a set of functions linked to the full autonomy of the shuttles remain to be defined, and will strongly impact the organisation of services. For example, in-vehicle counting is not yet available. Depending on the technical solution that will be implemented, the PTO's will be able to determine how to deal with an overload situation inside a shuttle. When all these systems are determined, then the PTO's can ask the rest of the supplychain (fleet management, passenger application,...) to integrate new specificities to these developments.

Based on the work developed in WP5, we can already anticipate some issues on which the PTOs will have to position themselves and give constraints for the development of services, especially in on-demand transport. For example, during the booking process, the number of passengers is first asked before determining a particular need (PRM, pushchair, etc.). It would be interesting to prioritise the request for special needs as these can influence the number of passengers available. In this case, each PTO will have to determine the criteria of acceptability for the subjects related to the place in the shuttles, and to organise a system based on the automatic control of available places. :



Similarly, it is now possible to select 11 passengers while requesting all possible special needs. It would be interesting to limit the choices in special needs or to reflect this on the number of available passenger seats. For this, each PTO will have to define the possible combinations in terms of number of seats according to the special needs already selected

## D5.1 Transport management policies' definition



The launch in period 3 of the various on-demand transport experiments will make it possible to test the tools made available to the demonstrator sites and to record malfunctions and feedback from customers. This information base will be a valuable source for the PTO's to develop their policy, and thus respond to these points in particular.