



Analysis of national/regional framework conditions and barriers of flexible transport

Upper Sûre Nature Park

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Summary

In the frame of the activity 1-A.1 within the LAST MILE project, the main framework conditions will be analysed and obstacles in establishing and operating Flexible Transport Services (FTS) will be identified. Therefore a survey was drafted where potential main issues hindering the implementation of FTS are raised. In addition, partners also have the opportunity to add further aspects and to summarize their viewpoints of what are the major barriers against Flexible Transport Services. This work shall be the basis for the individual analysis of barriers for Flexible Transport Services of the partner regions within the LAST MILE project. At the end there will be a synopsis of the main findings, which will be conducted by the Regional Management East Tyrol (RMO).

The consolidated findings of this joint analysis will finally flow into the general synthesis report at the end of phase 1 with overall conclusions and policy recommendations.

1. Introduction

Already the European-wide CIVITAS initiative, who is redefining transport measures and policies in order to create cleaner, better transport in cities, points out the importance of flexible transport systems. These flexible transport systems may overcome the two diverging classic systems of either relatively low cost with rigid timetables and routes (traditional local public transport) or high cost, high quality and high comfort alternatives (taxi and private car).

Not only are we talking here about transport systems and transport means in the urban area but foremost about rural areas. In this regard, manifold positive transport solutions and projects have already been realized, in various contexts and settings. Thus, in this study it is not necessary to think of concrete transport solutions and to reinvent the wheel but to think about the concrete and situation-wise hurdles and barriers (institutional/legal/economical/other) for a region to implement flexible transport solutions. Since we are talking here about Flexible Transport Services that shall be elaborated as touristic transport offers and as transport service for local citizens, a detailed analysis of the framework conditions, the barriers and the state-of-the-art in the regions under investigation is pivotal. This was also the point of departure in order to design a questionnaire building the basis for the analysis of the barriers that allows quantification on the one hand but requires further qualitative details on the other hand. In the focus of the analysis stands always the regional setting and consequently the regional framing conditions.

2. Flexible Transport Services – Definition

2.1 Definition

Since we are dealing here with an international context and thus very different regional settings regarding forms and approaches of flexible transport, it is important to have a common understanding of the term "Flexible Transport Services" and what it comprises.

In this study, we define Flexible Transport Services as services that only operate on demand. Operation on demand in this context includes call/dial systems (i.e. hailed shared taxi), seasonal/temporary systems (i.e. event bus/train) and other forms of on-demand transport such as sharing and pooling systems. Therefore it can comprise services that can be summarized as enhanced public transport services (also flexible public transport services) like a hailed shared taxi service and also other Flexible Transport Services such as car- and bikesharing or carpooling which are not part of public transport in the narrower sense.

For this definition, we took also into account different sources of literature. Often, flexible transport is regarded a special form of public transport, like in the definition of Penelope bacchus (n. d.):

Flexible Transport Services or demand responsive services (further on partly also as flexible transport solutions or flexible transport systems termed) are defined as “an advanced, user-oriented form of public transport characterized by flexible routing scheduling of small/medium vehicles operating in shared/ride mode between pick-up and drop-off locations according to passenger’s needs” (Penelope bacchus, n. d.).

In the LAST MILE project, however, also other flexible forms of transport like sharing and pooling shall be included in the term.

The main characteristic within the definition of FTS in the LAST MILE project is that the service operates only on demand. Thereby empty trips can be avoided .

Against this background, we differentiate the following categories, which can be divided by further attributes.

- Call/Dial Systems (operates only after calling)
 - following the regular route/schedule of the bus line (only after calling)
 - fixed start and end stop, deviation from the regular route to serve additional request stops within a defined corridor
 - fixed stops, flexible routing to individual destination
- Shuttle seasonal/temporary (operates only seasonally or at specific occasions) with fixed route and stops, mostly small distances
 - seasonal
 - events
- Sharing
- Pooling

2.2 Overview of Flexible Transport Services

The following table includes possible concrete services within the above described categories, however, without intending to be exhaustive. After the detailed analysis of framework conditions, the fields may be completed.

Operating System	Means of transport / name of the service						Practice Example
	train	bus	car	bike	boat	others	
Call/Dial Systems (operates only after calling)							
- following the regular route/schedule of the bus line (only after calling)		dial-a-bus					
- fixed start and end stop, deviation from the regular route to serve additional request stops within a defined corridor		dial-a-bus					
- fixed stops, flexible routing to individual destination		hailed-shared-taxi	hailed-shared-taxi				
Shuttle seasonal/temporary (operates only seasonally or at specific occasions) fixed route and stops, mostly small distances							
- seasonal	Seasonal train	hiking/skiing bus			boat ferry in summer		

- events	Event train	festival shuttle					
Sharing			Carsharing	Bikesharing /-rental			
Pooling			Carpooling				
others							

Table 1: Overview of Flexible Transport Services

3. Survey on national/legal framework conditions and barriers for flexible transport

3.1 General information

The survey is split into four different categories of possible barriers and related questions, namely institutional -, economical -, legal - and other barriers. All questions (and the corresponding answers) are referred to the regional situation/setting, although questions on regulatory issues may be related to the national legislation. For the better quantification and the further processing of the data, different assessment categories were chosen. Almost all questions however also require further specifications and more detailed answers which are supplementary to each question (always straight below to each question). These supplementary questions relate to expected barriers when implementing Flexible Transport Services and shall investigate and extract specific information about the various regions. Hence, they provide us with further details and allow a better interpretation and assessment of the answers.

Subsequently, in order to better understand the meaning of the question, most details and explanations are always written in brackets (=).

3.2 Barrier categories

Specifications on categories of framework conditions and barriers:

For the analysis of framework conditions and barriers, four major categories were chosen:

a) Regulatory barriers

Legal foresights can play an essential role when it comes to the implementation of Flexible Transport Services and thus also define the frame if and how transport services can be established. Often there are minor legal aspects that may facilitate or complicate the implementation and operation of flexible transport solutions.

Example: Legislation restrains the aerial/spatial use of a flexible transport solution that it can i.e. only be used within the municipality boundaries.

b) Institutional barriers

Institutional aspects can also be central hurdles for the implementation and operation of flexible transport solutions, whereby the term institution(al) has to be interpreted quite broadly. Institution in this context can thus range from political to private to associational etc. institutions. All these institutions and the related stakeholders are important when planning, implementing and operating flexible transport solutions. Moreover not only stakeholder involvement but also active contribution, know-how about the transport services and responsibility distribution are required for a successful management. However, as a nature of human being there is also quite a

potential for conflicts, resistance and opposition due to conflicting interests and viewpoints involved. Effectively it's the people who are responsible for the transformation process and where most barriers lie.

Example: An interest group like the political opposition or a local taxi entrepreneur may agitate against the planning of flexible transport solutions.

c) Economical barriers

Independent of the before-mentioned aspects, the economic and financial side has shown to be the decisive criterion either for success or failure of a project (in this instance the implementation and operation of a Flexible Transport Service). Hardly any project can be realized without the necessary financial means. This particularly challenges smaller municipalities and structurally weak areas. One aspect thereon is among others the sustainable financing without or with low subsidies in the long run.

Example: Initial costs for the implementation of flexible transport are covered by funds but there is no financing for the long term operation. Operational costs are not covered by the revenues.

d) Other barriers

Apart from the above-mentioned categories, there can also be obstacles and difficulties concerning technical, organizational, structural, topographic, demographic, marketing, information dissemination and other feasibility aspects that may intervene or hinder the realization of flexible transport solutions.

In this section there are some predefined questions which cover a few more aspects that have not been addressed within the above categories. However, these questions are not conclusive and further aspects can be addressed in the summary part following the survey.

Example: A very challenging settlement structure (i.e. low population density in a valley), which requires even for Flexible Transport Services a sound organisation and routing.

4. Survey

4.1 Survey questions

a) Regulatory barriers				
1.) National legislation for Flexible Transport Services (FTS)	Yes	No	Partially	Don't know
<p>1. Is there a national legislation that regulates Flexible Transport Services like</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport:</p> <p>If yes, where are they regulated (in which juridic acts / law books) and how are these Flexible Transport Services defined (please give a brief definition here)?</p> <p>(Loi Transports Publics §3.1;§4, 2004)</p> <p>Temporary/Occasional Transport services are considered as public transport with no regular characteristic. They are provided for public utility when the offer of the regular transport services are not sufficient to answer the public demand.</p>	<p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

2.) Territorial legislation and regional programmes	Yes	No	Partially	Don't know
<p>2. Is there apart from the national legislation also a regional legislation like a decree or an edict (such as a regional program is) that bindingly regulates flexible transport solutions?</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, where are they regulated (in which juridic act / regional program etc.)?</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	X X X X <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3.) Regulatory minimum standard	Yes	No	Partially	Don't know
<p>3. Is there a regulatory minimum standard or recommendations concerning the provision of public transport for settlement areas in your country/region?</p> <p>If yes, please briefly describe how that minimum standard looks like?</p> <p>Only indirect by the Global Strategy for sustainable mobility for residents and commuters published by the Ministry of sustainable Development and the Interior (MDDI). (MDDI, 2012). In this paper four objectives are announced concerning the modal split in Luxembourg. The first of these is a better articulation of spatial development and transport to make public transport more attractive.</p>		<input type="checkbox"/>	X	<input type="checkbox"/>

4.) Liability	Yes	No	Partially	Don't know
<p>4. Is the Flexible Transport Service regulated in terms of <u>liability</u> (= who is liable in case an accident happens with/without passenger happens)?</p> <p>a) Call/Dial systems <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>b) Seasonal/Temporary systems <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>c) Sharing systems <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>d) Pooling systems <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>e) Other flexible transport: _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:</p> <p>There are no special regulations for FTS, but for all the transport providers (private or public) exists regulations concerning liability.</p>				

6.) Pricing	Yes	No	Partially	Don't know
6. Is the Flexible Transport Service regulated in terms of <u>pricing</u> (= is there a minimum/maximum price/service; is the pricing open etc.)?				
a) Call/Dial systems	<input type="checkbox"/>		X	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>		X	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:</p> <p>If the FTS is part of the national public transport system, yes. If the FTS is spatially and legally restricted to one municipality, then pricing is free. (Réglement: Tarifs des transports publics §1, 2012)</p>				

7.) Scheduling and pulsing specifications	Yes	No	Partially	Don't know
7. Is				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regulated in terms of <u>scheduling/pulsing specifications</u> (=is the schedule free or does it have to be coordinated with other means of transport)?				
If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:				

8.) Scheduling and pulsing specifications	Yes	No	Partially	Don't know
8. Is				
a) Call/Dial systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regulated in terms of <u>stipulations of the national road traffic act</u> (=does the road traffic act apply to all of these flexible mobility services)?				
If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:				
Yes, because it applies to every transport/mobility presence on the roads. No specific regulations for FTS.				

9.) Accessibility	Yes	No	Partially	Don't know
9. Is the Flexible Transport Service regulated in terms of <u>accessibility</u> (= does everyone have access to this service)?				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:				

10.) Transboundary traffic	Yes	No	Partially	Don't know
10. Is the Flexible Transport Service regulated in terms of <u>transboundary traffic</u> (= is it principally possible to use the specific service also transboundary)?				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, please describe in brief how the different services a) – f) (where the yes applies) are regulated:				

b) Institutional barriers				
1.) Embedment in the transport association	Yes	No	Partially	Don't know
<p>1. Is flexible transport organizationally, institutionally or administratively covered/embedded by the national or provincial transport association for</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe in brief how the different services a) – f) (where the yes applies) are embedded/covered:</p> <p>Existing systems are embedded by contracts.</p> <p>Temporary/Occasional Transport services are considered as public transport with no regular characteristic. They are provided for public utility when the offer of the regular transport services are not sufficient to answer the public demand. (Loi Transports Publics §3.1;§4, 2004)</p>	<p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

2.) Opposition to FTS	Yes	No	Partially	Don't know
2. Do you expect (or already experience) opposition to Flexible Transport Services such as				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____				
by other transport service providers (i.e. taxi companies, provincial transport associations, private transport service providers etc.)?				
If yes, please describe in brief how this opposition for the different services a) – f) (where the yes applies) looks like/might look like:				

3.) Integration into public transport	Yes	No	Partially	Don't know
<p>3. Are any of the transport services (incl. timetables) and possible connections integrated and listed at the transport information services (i.e. journey planners, route planner for public transport) of national/provincial transport associations</p> <p>a) Call/Dial systems <input type="checkbox"/></p> <p>b) Seasonal/Temporary systems <input checked="" type="checkbox"/></p> <p>c) Sharing systems <input type="checkbox"/></p> <p>d) Pooling systems <input type="checkbox"/></p> <p>e) Other flexible transport: _____ <input type="checkbox"/></p> <p>If yes, please describe in brief how the different services a) – f) (where the yes applies) are integrated at the online platforms:</p> <p>Extraordinary transport services for specific occasions are integrated in the national transport information service (www.mobiliteit.lu).</p>				

4.) Political barriers	Yes	No	Partially	Don't know
4. Do you expect great political barriers (= political opposition in the municipal committee) for implementing				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, please describe in brief what kind of political barriers you'd expect for the different services a) – f) (where the yes applies):				

5.) Municipal management of mobility services	Yes	No	Partially	Don't know
5. Do you expect difficulties (regarding payment, administration, workloads etc.) when municipalities have to manage different mobility services like cable cars, shuttle services, ordinary bus lines, ski buses, hailed shared taxis and so on?	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, please describe (also with regard to your personal experience hereon) in brief what kind of difficulties you would expect:				
Most of the municipalities in the region are small. Often there are only a few employees, so depending on the system the workload could be too much.				

6.) Risks in collaboration between stakeholders	Yes	No	Partially	Don't know
<p>6. Do you see any risks (= risks due to deficient communication, risks evolving through conflicts, etc.) in the collaboration between local stakeholder groups who are involved in the planning, implementation and operation phase for</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe in brief of what you would expect on how the realization of the different services a) – f) (where the yes applies) might be affected by a collaboration within the establishment of flexible mobility services in your region:</p>	<div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div>	<div><input type="checkbox"/></div>	<div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div> <div><input type="checkbox"/></div>	<div>X</div> <div>X</div> <div>X</div> <div>X</div>

c) Economic barriers				
1.) Investment costs	Yes	No	Partially	Don't know
<p>1. Do you expect that it is rather easy for local/regional stakeholders (i.e. regional institutions, municipalities etc.) who are involved in establishing flexible transport to gain the needed investment costs for implementing/purchasing/installing</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe in brief what kind of financing at the implementation phase you'd expect for the different services a) – f) (where the yes applies):</p> <p>The Ministry of Transport supports the project LAST MILE and is involved from the beginning. As their purpose too is to improve public transport services, they support also financially projects to reduce individual motorized traffic. It is part of their strategy promoting the modal split (MDDI, 2012).</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>□</p>	<p>□</p> <p>□</p> <p>□</p> <p>□</p> <p>□</p>	<p>□</p> <p>□</p> <p>□</p> <p>□</p> <p>□</p>	<p>□</p> <p>□</p> <p>□</p> <p>□</p> <p>□</p>

2.) Investment costs	Yes	No	Partially	Don't know
2. Are there specific (national, regional, institutional or other) funding schemes for flexible transport solutions for				
a) Call/Dial systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe in brief the funding schemes and the connected conditions for the different services a) – f) (where the yes applies):</p> <p>The strategy of the Ministry of Transport is to reduce individual motorized traffic. Following this strategy national funding is possible for all these systems; conditions are a coordinated scheduling and implementing FTS-offers in areas/on times where regular public transport services are not appropriate (MDDI, 2012).</p>				

3.) Financial support by transport association	Yes	No	Partially	Don't know
3. Does the national/regional transport association financially support flexible transport solutions like				
a) Call/Dial systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe in brief from which level and how they are supported for the different services a) – f) (where the yes applies):</p> <p>See question C.2. There are no regional transport associations.</p>				

4.) Extra costs	Yes	No	Partially	Don't know
4. Do you see extra costs (especially with regard to marketing and information dissemination) for Flexible Transport Services compared to regular transport solutions for				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe in brief what kind of extra-costs you would expect and in which magnitude (low - moderate – high extra-costs) for the different services a) – f) (where the yes applies):</p> <p>Flexible Transport Service can even reduce costs when replacing inefficient regular public transport.</p>				

5.) Cooperation between private – private and private-public-partnership	Yes	No	Partially		Don't know
<p>5. Do you see it realistic that private entrepreneurs (i.e. a taxi company) cooperate with i.e. the public transport association or possibly also with other competitive private entrepreneurs in order to offer Flexible Transport Services?</p> <p>If yes, please describe in brief where you would expect the biggest challenges within the cooperation and which obstacles may possibly hinder such cooperation?</p> <p>Cooperation would need strict rules that no one of the partners could benefit in an unfair way from the cooperation. Involve possible partners as early as possible to exclude no one. Obstacles may be the “flexible” part of the project, manpower is very expensive especially when people are in “reserve”, waiting for a run.</p>		x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6.) Municipalities as providers and operators of FTS	Yes	No	Partially	Don't know
<p>6. Do you think that municipalities are capable of delivering Flexible Transport Services in the same quality and professionalism as private entrepreneurs (i.e. taxi companies, specialist firms etc.) do (think of / consider here also concession, professional background and expertise, personnel resources etc.)?</p> <p>If yes, please describe in brief where could be the advantage of having the municipality as operator vs. where would you expect the biggest disadvantages and obstacles in contrast to a private entrepreneur?</p> <p>The deficit of municipalities is the expertise in this sector. An advantage could be that municipalities will bridge times of no success better/easier than private entrepreneurs. A problem could be the relatively low capacity of staff in the municipalities.</p>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>

d) Other barriers				
1.) Available information	Yes	No	Partially	Don't know
<p>1. Is information about offers for flexible transport (whenever there is already an existing offer/solution in your region) broadly (=in different media for different target groups and in a certain order of magnitude) available for the general public for</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe in brief how information about the different services a) – f) (where the yes applies) and to which extent it is available:</p> <p>There is a national platform for all public transport services, where temporary/seasonal systems are integrated. Other offers like Call/Dial systems are promoted by the service provider via internet, the municipalities, word-of-mouth recommendation, ...</p>	<p>X</p> <p>X</p> <p>X</p> <p></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

2.) Risks in the anchoring of responsibilities	Yes	No	Partially	Don't know
<p>2. Do you see any risks when anchoring responsibilities (i.e. when anchoring responsibilities concerning the accounting, the operation, the administration, the maintenance, the project management and the organization) in realizing</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe in brief where you'd see the risks and what kind of risks you'd see for the different services a) – f) (where the yes applies):</p> <p>When tasks are related to lot of work force, than municipalities could be skeptical/not willing anchoring responsibilities, because most of the regional municipalities are small and have not much capacity of staff.</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

3.) Acceptance of use	Yes	No	Partially	Don't know
3. Do you expect barriers in the acceptance of use (of people) of flexible mobility solutions for				
a) Call/Dial systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe briefly how pronounced you'd expect people in your region to have 'difficulties' in accepting such flexible mobility solutions for a) – f) (where the yes applies):</p> <p>People in the region are used to the car, because the everyday life without car in the region is difficult for the moment. It will be difficult to change habits, even if the offered service is good. Car-pooling exists sporadically so acceptance maybe will be easier for this kind of mobility solution.</p>				

5.) Ticketing, booking and payment modalities	Yes	No	Partially	Don't know
5. Do you expect difficulties with the ticketing, booking and/or payment modalities for				
a) Call/Dial systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>If yes, please describe briefly what kind of difficulties and problems in relation to ticketing, booking and/or payment you'd see for the flexible transport solutions for a) – f) (where the yes applies):</p>				

6.) Online booking and online payment	Yes	No	Partially	Don't know
6. Does an already existing flexible transport solution in your region (if you have one/several) like				
a) Call/Dial systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Seasonal/Temporary systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
c) Sharing systems	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Pooling systems	X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other flexible transport: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>offer online-booking and/or online payment via app or webpage?</p> <p>e.a. NightRider</p>				

7.) Professional management	Yes	No	Partially	Don't know
<p>7. Do you expect difficulties concerning the professional management (= professional management from the 'birth' to the actual operation of the Flexible Transport Service –embracing administration, marketing & PR, operation, financial management etc.) for</p> <p>a) Call/Dial systems</p> <p>b) Seasonal/Temporary systems</p> <p>c) Sharing systems</p> <p>d) Pooling systems</p> <p>e) Other flexible transport: _____</p> <p>If yes, please describe briefly what kind of difficulties and problems in relation to the professional management you'd see for the flexible transport solutions for a) – f) (where the yes applies):</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	X X X X <input type="checkbox"/>

8.) Sustainable transport within education	Yes	No	Partially	Don't konw
<p>8. Is transport and thereby more specifically >>sustainable transport<< with all its facets an integral part of education in schools in your region?</p> <p>If yes, please describe briefly what you know/think is taught in schools about sustainable transport:</p> <p>Sustainable transport is not taught in schools, apart from small campaigns, actions, organized sporadically by teaching staff, who is interested in. Children of 10 years all participate in a campaign called "Coupe scolaire", there children make a bicycle driving license, being taught how to drive on the road, etc. This campaign is to teach about the security on the road, more than to sensitize about "sustainable transport".</p>	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

9.) Awareness rising and information dissemination	Yes	No	Partially	Don't konw
<p>9. Are there also other (out-of-school) institutions that provide education on sustainable transport and flexible transport solutions in your region?</p> <p>If yes, please describe briefly what you know/think is taught about sustainable transport in these institutions and how important are they in the region:</p> <p>The national organization LVI, an initiative to promote the use of bicycles and to stipulate the development of the road traffic to more bicycle-friendly infrastructure. They are not very important in our region.</p>	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

10.) Existing awareness	Yes	No	Partially	Don't konw
<p>10. Do you think there is sufficient awareness (= most people are aware that the motorized individual traffic causes environmental problems) on the importance of sustainable transport and particularly flexible transport within the general public and also within local stakeholders and decision makers?</p> <p>If yes, please describe briefly what are people aware of in relation to sustainable transport and why do you think there is still a discrepancy between environmental ideals and effective transport habits:</p> <p>-people see traffic jams, problems in traffic, etc rather than the environmental aspect of the motorized individual traffic</p> <p>- people hardly will change from individual car use to public/shared transport</p>	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

5. Summary of barriers

The national public transport system is regulated by the Department of Transport (from the Ministry for sustainable development and the Interior). (Art.2; Mémorial A – N.107; 2004). Municipalities can only implement systems without agreement of the Ministry, when they operate inside their borders. These systems are not part of this law (Art.2; Mémorial A – N.107; 2004) concerning the public transport. In practice this concerns mainly school transport services or city busses.

Concerning the implementation and use of flexible transport solutions in Luxembourg a close collaboration with the national Department of Transport is consequently very important. The analysis of the technical state-of-the-art for our region shows, that the car is the most important means of transport, even though spatio-temporal facilities of public transport has a high performance. Referring to the « Global strategy for a sustainable mobility for residents and commuters» the MDDI (=Ministry for sustainable development and the Interior) is highly interested in reducing the use of cars and is therefore looking for alternatives making public transport more attractive. National legislation in Luxembourg is not yet designed for flexible transport services; the only FTS appearing in the legislation are temporary and seasonal systems. Even though flexible transport services are not yet anchored in the national and regional legislation opportunities seem to be favorable. In the “Strategy for a sustainable mobility”, the MDDI formulates 4 goals; achieving a better articulation between spatial development and public transport, increasing non-motorized traffic to 25% of the modal split until 2020 and 25% of the motorized traffic by public transport until 2020. The fourth goal is to develop alternatives to the simple use of cars, like the offer for Park&Ride and Carpooling.

An important barrier or challenge for the good run of a flexible transport service in the Upper-Sûre Nature Park could be the low population density. The population density is 65 inh/km² in the Upper Sûre Nature Park and 51 inh/km² in the Our Nature Park and local supply is more and more centralised on different centres within the region. So that transport services have to be adapted to these quite different and widespread needs. Around 100'000 overnight tourists, coming mainly during summer season, the critical mass needed on the long run for a flexible transport system is relatively low. Unfortunately one-day tourists are not counted for the region. Points of interest are widespread and a lot of tourists are visiting the whole region, not only small parts of it, so that systems with a focus on tourists have to be designed not only locally.

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Annex

a) Bibliography of literature sources – partner

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Glossary

Terminology

Public transport: Public transport is the provision of a shared passenger transport service which is available for the general public, as distinct from modes such as taxicab, carpooling or hired buses which are not shared by strangers without private arrangement (Glover, 2011).

Micro-Public Transport service (Micro-PT service): Micro-PT systems are an important part of Flexible Transport Services with the goal to promote local traffic solutions through a public provider (the financing of the micro-PT service is done by public institutions – i.e. municipalities - whereby the operation of the micro-PT service can be offered by a licensed private operator) (Wolf-Eberl et. al., 2011).

Flexible Transport Services: Flexible Transport Services or demand responsive services (further on partly also as flexible transport solutions or flexible transport systems termed) are defined as “an advanced, user-oriented form of public transport characterized by flexible routing scheduling of small/medium vehicles operating in shared/ride mode between pick-up and drop-off locations according to passenger’s needs” (Penelope bacchus, n. d.).

Last mile transport: The last mile - or last kilometer transport describes particularly the last kilometers of a multi-modal travel chain based on public transport (mostly from a transportation hub –i.e. at the train station) for either passengers or goods (Wang H. and Odoni A., n. d.).

Touristic transport services: Touristic transport services is a quite broad term and does neither specify a certain means of transport nor whether the transport service is provided as flexible or standard transport. It can thus comprise any kind of the before mentioned transport services. The goal is to enable touristic transport aside from individual motorized traffic in order to access touristic destinations.

Commonly used Flexible Transport Services

- **On-demand bus**

is a bus service that works in contrast to regular scheduled bus lines only after prior calling (call, depending from operator to operator, has to be done some time upfront) of the bus-operator. On-demand buses also deviate from the routing compared to an ordinary bus line service (Austrian Federal Chancellery – Kraftfahrlineingesetz § 38, 2016).

- **Hailed shared taxi service**

is a taxi service that works in contrast to a regular taxi with fixed stops but with a flexible routing choice. The taxi also has to be called upfront (Austrian Federal Chancellery - Kraftfahrlineingesetz § 38, 2016).

- **Shuttle service**

Shuttle bus (or coach) is a bus service which transports passengers primarily between two fixed points. Shuttle services often fulfill the function as passenger interconnections and shuttle people mostly from transport hubs (i.e. train station) to different destinations (i.e. hotel, a specific touristic destination etc.). Seasonally it is also often used as supplementary transport offer like as skiing bus or hiking bus (Austrian Federal Chancellery – Gelegenheitsverkehrsgesetz § 2ff, 2016 and The government of Western Australia – Department of Transport, n. d.).

- **Carsharing**

is the organized collective use of one or more cars for timely limited periods (mostly hours). Carsharing is particularly attractive to users who occasionally need a car. The organization of the renting of the cars may be a commercial business or the users may be organized as a company, public agency or cooperative (Bundesverband CarSharing, n. d.). Carsharing may also be attractive from a touristic viewpoint and could potentially substitute the use of private cars.

- **Carpooling**

is the sharing of car journeys so that more than one person travels in a car. A popular carpooling variant is the common commuting to the work place. Another possibility of carpooling is the use of open platforms where registered members can book car journeys (Association for commuter transport, n. d.).

- **Bikesharing**

is the use of publically available bicycles which can be rented for a short time-span and usually within a bigger rental network (several rental stations). The rental works as self-service. One important characteristic is that the bicycles don't have to be brought back to the original rental point but may also be returned to any other rental station within the rental service. The technical access via card, key, mobile phone or password at a terminal as well as the parking mode of the bicycles can deviate from system (provider) to system (provider) (Forum bikesharing Schweiz, n. d.).

- **Inland passenger water-way transport**

is the transport of passengers via boat or ferry (trip boats, hotel boats, water taxis etc.) between defined 'destinations' either within a city or also as extra-urban transport. People can board or exit the boats at the defined destinations. This transport service can be interesting for both – residents and tourists (UK Government, 2012).

- **Other Flexible Transport Service**

There are many solutions and concepts on transport services and particularly Flexible Transport Services available. The foregoing were the most commonly used ones and were thus briefly addressed. Since this enumeration is not conclusive it is possible to present and describe here further flexible transport concepts. Also the questions in the survey are then related to this/these other Flexible Transport Services.