



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

# **Region of East Tyrol**

Regional Management East Tyrol July 2017



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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 has been 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 summarise their viewpoints of 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, which redefines transport measures and policies in order to create cleaner, better transport in cities, has pointed out the importance of flexible transport systems. These flexible transport systems may overcome the two diverging classic systems of either relatively low cost schemes with rigid timetables and routes (traditional local public transport) or high cost, high quality and high comfort alternatives (taxi and private car).

This discussion is not only 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 concrete and situation-wise hurdles think about the 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. The regional setting and consequently the regional framing conditions are always in the focus of the analysis.

### 2. Flexible Transport Services – Definition

#### 2.1 Definition

Since we are dealing with an international context and thus very different regional settings regarding forms and approaches to 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 ondemand transport such as sharing and pooling systems. Therefore, it can comprise services that can be summarised 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 also took different sources of literature into account. Often, flexible transport is regarded as a special form of public transport, like in the definition of Penelope bacchus (n. d.):

Flexible Transport Services or demand responsive services (subsequently also termed as flexible transport solutions or flexible transport systems) 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 also 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						
	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					
<ul> <li>fixed stops, flexible routing to individual destination</li> </ul>		hailed-shared- taxi	hailed-shared- taxi				
Shuttle seasonal/temporary (operates only seasonally or on 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 <u>regional situation/setting</u>, 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.

<u>Example</u>: Legislation restrains the aerial/spatial use of a flexible transport solution so 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 of the transport services and responsibility distribution are required for successful management. However, human nature itself presents quite a potential for conflicts, resistance and opposition due to conflicting interests and viewpoints involved.







Essentially, most barriers lie with the people who are responsible for the transformation process.

<u>Example</u>: 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. <a href="Example: Initial costs">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.

<u>Example:</u> 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
Is there a national legislation that regulates Flexible Transport Services like				
a) Call/Dial systems			X	
b) Seasonal/Temporary systems		Х		
c) Sharing systems		Х		
d) Pooling systems		Х		
e) Other flexible transport:				Х
If yes, where are they regulated (in which juridical acts / law books) and how are these Flexible Transport Services defined (please give a brief definition here)?  a) On demand bus: service with licensed routing and defined stops; circulating only after call to the requested destination or circulating without call according to fixed time schedules and on a fixed route; when a call comes in, the dial-on bus may deviate from the route and may also drive to the 'requested stop' and afterwards turn back to the original route (Kraftfahrliniengesetz §38, 2016)  Hailed shared taxi: circulation after call with fixed time-schedule and for a fixed price to a requested destination within a certain operation area. The taxis and stops need to be labeled as a hailed shared taxi (or hailed shared stop) (Kraftfahrliniengesetz §38, 2016)				

d) Private carpooling systems are not legally defined (www.parlament.gv.at).		
The "Personennah- und Regionalverkehrsgesetz 1999" (§ 1) defines organizational and financial basics for the local public transport as well as the structure and the responsibility of transport association (Personennah- und Regionalverkehrsgesetz §5, 2016).  The "Gelegenheitsverkehrsgesetz" defines general regulations about commercial transport of persons (Gelegenheitsverkehrsgesetz 1996).		

2.) Territorial legislation and regional programmes	Yes	No	Partially	Don't know
2. Apart from the national legislation, is there also a regional legis decree or an edict (such as a regional program is) that bindingly flexible transport solutions?				
		Х		
a) Call/Dial systems		Х		
b) Seasonal/Temporary systems		Х		
c) Sharing systems		Х		
d) Pooling systems e) Other flexible transport:				Х
If yes, where are they regulated (in which juridical act / regional	program etc.)?			
There is no regional legislation as well as binding edicts for FTS	S available.			
However, a development program of the federal state Tyro principles of on-demand-based public transport (establishment sustainable mobility, development of public transport) (Zuku 2011, p. 63f, 102).	of solutions for			
The 'Tyrolean Sustainable Strategy' gives general measures	for sustainable			
mobility in rural areas (developing and improvement of susta	ainable mobility			







and public transport, avoidance of individual transport, (Tiroler		
Nachhaltigkeitsstrategie, 2012, p. 111-123).		
The 'Tyrolean Mobility Program 2013 – 2020' defines objectives and measures		
for sustainable mobility in Tyrol. An overall objective is to increase the rate of		
public transport to 3%. Additionally the establishment of a funding scheme		
plan for flexible transport systems in rural areas is planned		
(Mobilitätsprogramm 2013 – 2020, o.S.) These concepts have no binding		
character.		

3.) Regulatory minimum standard	Yes	No	Partially	Don't know
Is there a regulatory minimum standard or recommendations concerning the provision of public transport for settlement areas in your country/region?  If yes, please briefly describe features of this minimum standard?			х	
There are no regulative minimum standards defined. Recommendations are given for spatial planning; Business areas as well as settlement areas should be established, keeping the possibility of commuting with public transport services in mind. Focus is on the coordination of settlement development and public transport services as well as the development of sustainable on-demand mobility solutions (ZukunftsRaum Tirol 2011, p. 93, 95, 102).				







4.) Liability	Yes	No	Partially	Don't know
Is the Flexible Transport Service regulated in terms of <u>liability</u> (= who is liable in case an accident happens with/without passenger happens)?				
a) Call/Dial systems			x	
b) Seasonal/Temporary systems			X	
c) Sharing systems	х			
d) Pooling systems	X			
e) Other flexible transport:				X
<ul> <li>a) The operator as well as the driver is liable in case an accident happens.</li> <li>Each vehicle has a compulsory insurance, in case of an accident the accident perpetrator is liable.</li> </ul>				
b) The operator/driver is liable. Each vehicle has a compulsory insurance, in case of an accident the accident perpetrator is liable.				
c) Liability is regulated individually by provider; in most cases user has to pay a co-payment for the insurance in case of an accident. User requires membership of car-sharing provider.				
d) Private car sharing: basically, the compulsory insurance of each private car/car owner regulates liability. (www.oeamtc.at)				







5.) Spatial limitations	Yes	No	Partially	Don't know
5. Is the Flexible Transport Service regulated in terms of aerial/spatial limitations (= can the transport service be used/offered without spatial limitations)?				
<ul> <li>a) Call/Dial systems</li> <li>b) Seasonal/Temporary systems</li> <li>c) Sharing systems</li> <li>d) Pooling systems</li> </ul>	X	П Х	П Д Х	
e) Other flexible transport:		X 🗆		X
Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
a) On demand bus service: Licensed routing and defined stops; circulation - 2 options: 1) circulating only after call to the desired destination within the licensed area starting from defined stops; 2) circulation without call at fixed time schedules and on a fixed route; when a call comes in the dial-on bus may deviate from the route and may also drive to the 'request stop' and afterwards turn back to the original route (Kraftfahrliniengesetz §38, 2016). Hailed shared taxi: circulation after call with fixed time-schedule and for a fixed price to a desired destination within a certain operation area (Kraftfahrliniengesetz §38, 2016).				
<ul> <li>b) No spatial limitation.</li> <li>c) There is no legislation for car-sharing in Austria, however there are limitations from an organizational and administrative point of view (availability/transport of the carsharing-car to the rental point or other defined stations, usage inside the defined operation area of the car-sharing provider. (p.e. Flugs e-carsharing East Tyrol: usage within Europe permitted, for trips outside Europe is a permit of the provider is required (see Allgemeine Geschäftsbedingungen Flugs)</li> <li>d) No transboundary hurdles (the user is free to go anywhere).</li> </ul>				







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		Х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems		х		
d)	Pooling systems	х			
e)	Other flexible transport:				x
	Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
	d) The pricing for private carpooling is regulated by law with 0,05 € per car passenger (www.oeamtc.at).				
	Generally, pricing is regulated by the operator/provider.  General definitions about conditions of prices for public transport are regulated in the Kraftfahrliniengesetz (Kraftfahrliniengesetz § 31, 2016).				







7.)	Scheduling and pulsing specifications	Yes	No	Partially	Don't know
7.	Is				
a)	Call/Dial systems		Х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems		Х		
d)	Pooling systems		Х		
e)	Other flexible transport:				X
	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)?  Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
	No legislation for scheduling and pulsing specifications available.				
	Terms of scheduling/pulsing specifications are not regulated. It depends on the project if:				
	<ul> <li>FTS is connected with regional/transregional public transport – need to be coordinated</li> <li>FTS covers local transport needs – does not need to be coordinated</li> </ul>				
	F13 covers local transport fleeds – does not fleed to be coordinated				
	In most cases, FTS are coordinated with the overall public transport timetables and connections to provide an attractive mobility offer and attractive connections or services.				
	Basically, the transport association provides minimum standard services of public transport, which is coordinated with other means of transport. Beyond that, the municipalities/region has to request additional services to complete the transport offer. Scheduling/pulsing specifications are free and not regulated.				







8.)	Scheduling and pulsing specifications	Yes	No	Partially	Don't know
8.	Is				
a)	Call/Dial systems		х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems		Х		
d)	Pooling systems		Х		
e)	Other flexible transport:				х
	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)?  Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
	FTS are not regulated in terms of the national traffic act.				







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	Х			
b)	Seasonal/Temporary systems	X			
c)	Sharing systems	Х			
d)	Pooling systems		Х		
e)	Other flexible transport:				Х
	Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
	<ul> <li>a) There are varying kinds of models:</li> <li>flexi-shuttel-Höfen: club membership is required to use the service, pre-ordering via phone call is necessary, fixed ticket price;</li> <li>defMobil: hailed shared taxi is accessible by everyone, if he/she pays the fixed ticket price. It is only provided after pre-ordering via phone call.</li> <li>Virger Mobil: The service is operated with voluntary drivers within the municipality, only citizens of this municipality are allowed to use the service. Other user groups (tourists, commuter) cannot use the service.</li> <li>b) Skibus (just persons with ski clothes can enter the bus) or school bus (just pupils are allowed to use service).</li> </ul>				
	<ul><li>c) Club membership is required to use service.</li><li>d) No regulation of accessibility</li></ul>				
	If a FTS is integrated into any transport association, they have to fullfill specific requirements concerning accessibility (p.e. disability-friendly, technical standards)				







10.) Trans	boundary traffic	Yes	No	Partially	Don't know
	Transport Service regulated in terms of <u>transboundary traffic</u> (= is ossible to use the specific service also across border)?				
a) Call/Dial syste	ems		х		
b) Seasonal/Ter	nporary systems		x		
c) Sharing syste	ms		х		
d) Pooling syste	ms		х		
e) Other flexible	transport:				Х
Where the "yee" e) are regulate	es" applies, please describe in brief how the different services a) – ed:				
No regulation	for transboundary traffic available.				







• • •	) FTS for different purposes	Yes	No	Partially	Don't know
11.	Is the Flexible Transport Service regulated in terms of limitations with regard to certain purposes (i.e. a school bus –although it is categorized as a public transport service – is often only allowed to transport school children but no other citizens)?				
٥)	Call/Dial avetema	Х			
-	Call/Dial systems	Х			
	Seasonal/Temporary systems		Х		
-	Sharing systems		Х		
-	Pooling systems		X		
e)	Other flexible transport:				X
	Where the "yes" applies, please describe in brief how the different services a) – e) are regulated:				
	· · · · · · · · · · · · · · · · · · ·				







b) Ins	titutional barriers				
1.)	Embedment in the transport association	Yes	No	Partially	Don't know
1.	Is flexible transport organizationally, institutionally or administratively covered/embedded by the national or provincial transport association for				
a)	Call/Dial systems	Х			
b)	Seasonal/Temporary systems	Х			
c)	Sharing systems		x		
d)	Pooling systems		х		
e)	Other flexible transport:				Х
	<ul> <li>Where the "yes" applies, please describe in brief how the different services a) – e) (where the yes applies) are embedded/covered:</li> <li>a) Two hailed shared taxi service (defMobil, AST Anras) will be covered/embedded in national transport association up to December 2017.</li> <li>b) Ski bus service is integrated in regular public transport service time</li> </ul>				
	schedules. Cooperation and coordination between tourism, transport association and municipalities is necessary. Also a night liner is integrated in the public transport association. "Wanderbus" / trekkingbus for National Park is embedded in national transport association (ÖBB and VVT). Cooperation between actors is necessary.				







2.)	Opposition to FTS	Yes	No	Partially	Don't know
2.	Do you expect (or already experience) opposition to Flexible Transport Services such as				
	0.11/0: 1		Х		
•	Call/Dial systems		Х		
b)	Seasonal/Temporary systems		Х		
c)	Sharing systems		х		
d)	Pooling systems				Х
e)	Other flexible transport:				
	by other transport service providers (i.e. taxi companies, provincial transport associations, private transport service providers etc.)?				
	Where the "yes" applies, please describe in brief this actual/expected opposition for the different services a) $-$ e):				
	There are no oppositions to FTS by other transport service providers expected.				







3.)	Integration into public transport	Yes	No	Partially	Don't know
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				
a)	Call/Dial systems	X			
b)	Seasonal/Temporary systems	X			
c)	Sharing systems		х		
d)	Pooling systems		x		
e)	Other flexible transport:				Х
	<ul> <li>e) are integrated into the online platforms:</li> <li>There is no overall national transport association for Austria available. Each federal state provides a transport association separately (i.e. Verkehrsverbund Tirol)</li> </ul>				
	a) Official services (accessible for everyone) are integrated and listed at the transport information services (VVT, ÖBB). I.e. hailed-shared-taxi defMobil: information about conditions and phone number of transport service, connection to public transport service.				
	b) Skibus and trekking bus of NPHT is integrated in provincial transport associations (timetables, connection) and listed at the transport information service.				







4.)	Political barriers	Yes	No	Partially	Don't know
4.	Do you expect great political barriers (= political opposition in the municipal council) for implementing				
a)	Call/Dial systems		х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems		х		
d)	Pooling systems		Х		
e)	Other flexible transport:				X
	Where the "yes" applies, please describe in brief what kind of political barriers you'd expect for the different services $a) - e$ ):				
	Almost every municipality in East Tyrol has political willingness to implement flexible mobility solution.				

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?			х	
If yes, please describe (also with regard to your personal experience hereon) in brief what kind of difficulties you would expect:				
Insufficient payment conditions or staff/personnel resources for management as well as complex administration can be hurdles for the municipalities.				







6.)	Risks in collaboration between stakeholders	Yes	No	Partially	Don't know
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				
				Х	
a)	Call/Dial systems			Х	
b)	Seasonal/Temporary systems		Х		
c)	Sharing systems		Х		
d)	Pooling systems				Х
e)	Other flexible transport:				
	Where the "yes" applies, please describe in brief how you expect the realization of the different services a) $-$ e) might be affected by a collaboration within the establishment of flexible mobility services in your region:				
	a) and b) If the implementation of a new FTS is an opposition offer to the provided service of a private operator, then the collaboration between the actors might be difficult.				







7.)	Acceptance of FTS for touristic purposes by locals	Yes	No	Partially	Don't know
7.	Do you see opposition on the part of local residents when developing Flexible Transport Services such as				
a)	Call/Dial systems			x	
b)	Seasonal/Temporary systems			X	
c)	Sharing systems		х		
d)	Pooling systems		х		
e)	Other flexible transport:				X
	which are originally designed as touristic mobility offers?				
	Where the "yes" applies, please describe in brief how this opposition might be characterized for the different services a) $-$ e):				
	If tourists can use the service for free (with a regional guest card) and residents need to pay for it.  If the service is just provided for tourists and residents are not allowed to use service (if tourists have a privilege).				







	Investment costs	Yes	No	Partially	Don'
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 meet the needed investment costs for implementing/purchasing/installing				Kilov
٠,	O-II/Di-Lavataga			X	
a)	Call/Dial systems			X	
b)	Seasonal/Temporary systems			X	
c)	Sharing systems			X	
d)	Pooling systems				Х
e)	Other flexible transport:				
	Where the "yes" applies, please describe in brief the kind of financing you expect for the different services $a$ ) $ e$ ) during the implementation phase: In Austria, there are different national funding programs for FTS available. Municipalities have to fulfill diverse requirements to gain funding from national site. Those funding programs are often not enough for municipalities to finance FTS. The federal state level generally welcomes mobility projects to improve the mobility offer within the region and decrease individual traffic. The project needs to be innovative and the region has to gain an added value.				
	Negotiation and good collaboration as well as communication between all relevant partners (tourism, transport association, municipalities and regional institutions) are necessary to raise investment funds.				







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	Х			
b)	Seasonal/Temporary systems	X			
c)	Sharing systems	X			
d)	Pooling systems		х		
e)	Other flexible transport:				х
	connected conditions for the different services a) – e):  There are national funding schemes for the implementation of sustainable transport solutions. There is no consistent funding scheme available. Funding rates are between 20 and 30 % (www.umweltfoerderung.at). In most cases, the implementation/investment will be supported by national funding, but not the running or long term operation.  EU-funding schemes (e.g. LEADER, INTERREG) also support the implementation of FTS if it is embedded in a larger scale project. Federal state level also supports the implementation; funding rate is individual by project, no special funding program available.				







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	Х			
b)	Seasonal/Temporary systems	Х			
c)	Sharing systems		Χ		
d)	Pooling systems		Х		
e)	Other flexible transport:				Х
	Where the "yes" applies, please describe in brief from which level and how they are supported for the different services a) $-$ e):				
	a) If the service is embedded into the transport association (timetable, management) it supports FTS with one third of the project sum. The rest of the sum needs to be financed by regional institutions like tourism association, National Park and municipalities.  Basic services (primary care of public transport) are financed by state level (70%) and federal state level (30%). Additional services are financed by regional transport association, municipalities and other institutions (30% / 30% / 30%).				
	b) Ski or trekking busses will be financially supported by regional transport association if the service is embedded into the association. The rest is financed by municipality and other institutions.				







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	Х			
b)	Seasonal/Temporary systems	X			
c)	Sharing systems	Х			
d)	Pooling systems	X			
e)	Other flexible transport:				Х
	Where the "yes" applies, please describe in brief what kind of extra-costs you expect and in which extent (low - moderate $-$ high extra-costs) for the different services a) $-$ e):				
	If the FTS is not embedded in the transport association or covered by any other institutions, it will cause moderate costs for marketing and information dissemination. Also labor costs for the preparation of information dissemination are moderate. The investment costs for the vehicle might be very high, if a municipality needs to overtake all costs. Also the calculation of the timetables as well as the long term management will cause high costs.				







5.)	Cooperation between private – private and private-public-partnership	Yes	No	Partially	Don't know
4.	Do you find 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?	х			
	If yes, please describe in brief where you expect the biggest challenges within the cooperation and which obstacles may possibly hinder such cooperation?				
	Problems may arise if the provided service is not profitable for the private operator after contracting as expected. The private entrepreneur may not have enough capacity (too little personal resources, no appropriate vehicle) to provide good quality service. Another obstacle might be the low occupancy rate of the FTS forcing private entrepreneurs to work for lower profits.				







6.) Municipalities as providers and operators of FTS	Yes	No	Partially	Don't know
6. Do you think that municipalities are capable of delivering Flexible Transport Services in the same quality and professionality as private entrepreneurs such as taxi companies, specialist firms etc. (consider here also concession, professional background and expertise, personnel resources etc.)? If yes, please compare in brief where might the advantages be of having the municipality as operator vs. where would you expect the biggest disadvantages and obstacles in contrast to a private entrepreneur? They have to fulfill requirements for a concession, have to look for other investment	х			
strategies (i. e. funding programs, other investors), financial difficulties, agreement of all members in local the council.  The management of FTS will be a challenge for the municipalities. Municipalities often can't focus on specific issues due to lack of expertise or personnel resource. Additional costs for organization will be a hurdle. Another				
challenge is to fulfill the requirements for a concession if they would like to provide a profit-orientated service (have to find an operator or person who fulfills requirements).  But if the service is worth it and residents or guests can gain an added value, a municipality can manage the implementation and service of FTS.  Municipalities need more time for the development and the organization of the				
FTS than professional operators. Also, the regional management supports development and provides know-how.				







1.)	Available information	Yes	No	Partially	Don' knov
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				
a)	Call/Dial systems	Х			
b)	Seasonal/Temporary systems	X	П	п	П
c)	Sharing systems	X			
d)	Pooling systems		x		
e)	Other flexible transport:				Х
	<ul> <li>Where the "yes" applies, please describe in brief how information about the different services a) – e) and to which extent it is available:</li> <li>a) Information is available via websites at different national transport associations, touristic homepages of the region, tourist agencies, municipality offices or touristic hot spots. Also available are printed timetables at stops for call/dial systems which are coordinated with public transport or embedded in transport associations. (i.e. defMobil).</li> <li>b) Information is available via regional websites, tourist agencies, municipality's offices, tourist destination (i.e. ski bus, hiking bus)</li> <li>c) Information is available via regional websites or tourist agencies.</li> <li>d) No specific information about carpooling is available in East Tyrol. You can register at official carpooling platforms like "blablacar". Especially young</li> </ul>				
	people/students organise their trips themselves via Facebook. No official carpooling, operates within the region, just for longer trips outside East Tyrol.  Information is often not clear in webpages (for example official touristic homepage of East Tyrol: www.osttirol.com; category mobility).				







2.)	Risks in the anchoring of responsibilities	Yes	No	Partially	Don't know
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				
a)	Call/Dial systems		х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems		х		
d)	Pooling systems				X
e)	Other flexible transport:				X
	Where the "yes" applies, please describe in brief where you see the risks and what kind of risks you'd see for the different services $a) - e$ :				
	There are no serious risks. The main condition is that a municipality or tourist association has the willingness to establish new transport services in order to improve current mobility. So all involved parties will take responsibilities for the service (i.e. defMobil, ski busses, municipality organized intern FTS).				







3.)	Acceptance of use	Yes	No	Partially	Don't know
3.	Do you expect barriers in the acceptance of use by the people of flexible mobility solutions for				
۵۱	Call/Dial avatama		Х		
-	Call/Dial systems			X	
	Seasonal/Temporary systems Sharing systems			X	
c) d)	Sharing systems Pooling systems	П	П	X	□ <b>X</b>
,	Other flexible transport:				^
<del>C</del> )	Other hexible transport.				
	Where "yes" applies, please describe briefly how pronounced you expect people in your region to have 'difficulties' in accepting such flexible mobility solutions for a) $-$ e):				
	a) Awareness raising and good public relations work is necessary to reach acceptance of use in people's minds. Stakeholders have to support the system during establishment and during operation.				
	b) When locals have to pay for transport service and tourists can use it for free (i.e. free use of skibus with skipass, inhabitants have to pay).				
	c) People are not willing to give up their own flexibility. They don't want to give up the private car even though they are not awared the financial strain it presents.				
	d) People are sometimes caught between the acceptance of FTS and their wish for flexibility: they may not want to give up their private cars.				
	Awareness raising and good public relations work is necessary to reach acceptance of use.				







4.)	Personnel resources for managing a FTS	Yes	No	Partially	Don't know
4.	Do you expect the provider of a FTS - apart from financial resources – to also invest in personnel resources (= to employ people) in order to manage a Flexible Transport Service such as				
a)	Call/Dial systems			x	
b)	Seasonal/Temporary systems			х	
c)	Sharing systems		x		
d)	Pooling systems		Х		
e)	Other flexible transport:				X
	<ul> <li>Where "yes" applies, please allude briefly how many working hours/work you would expect for managing the different services a) – e) on an operational basis (= does not include the implementation and planning phase), given that a single unit of a certain Flexible Transport Service is offered:</li> <li>a) It depends on the provider's profitability. If the service is not cost-effective for the operator, there will be no investment in personnel resources. Effort and service has to be clarified in advance. If the capacity is not reached, no additional people for management or chauffeur service will be employed. Some services such as municipality organized intern FTS, operate with volunteers, so they don't need to pay extra personnel.</li> <li>b) The amount of working hours depends on the purpose of usage (ski bus,</li> </ul>				







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		Х		
b)	Seasonal/Temporary systems		х		
c)	Sharing systems	Х			
d)	Pooling systems		х		
e)	Other flexible transport:				х
	<ul> <li>Where "yes" applies, please describe briefly what kind of difficulties and problems in relation to ticketing, booking and/or payment you see for the flexible transport solutions for a) – e):</li> <li>In most cases tickets are available directly from the bus driver or ticket office and are accessible for everyone.</li> <li>c) Especially the elderly people may have problems with modern ticketing systems via webpage or apps; they often don't have access to online booking.</li> </ul>				







6.) Online booking and online payment	Yes	No	Partially	Don't know
<ol> <li>Does an already existing flexible transport solution in your region (if you have one/several) like</li> </ol>				
a) Call/Dial systems			x	
b) Seasonal/Temporary systems		х		
c) Sharing systems	х			
d) Pooling systems			X	
e) Other flexible transport:				Х
<ul> <li>offer online-booking and/or online payment via app or webpage?</li> <li>a) If service is embedded in a transport association, you can also pay via webpage (www.tickets.oebb.at/de/ticket/timetable). Otherwise no online service is available. Tickets are available from the driver.</li> <li>b) No online service available.</li> <li>c) Flugs e-carsharing offers booking and payment via webpage. (www.carusocarsharing.com; no app available yet)</li> <li>d) Official car pooling is organized via webpage, intern car pooling is organized via facebook.</li> </ul>				







7.)	Professional management	Yes	No	Partially	Don't know
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				
٥)	Call/Dial avatama			Х	
	Call/Dial systems			Х	
p)	Seasonal/Temporary systems		X		
C)	Sharing systems		X		
d) e)	Pooling systems Other flexible transport:		X		
·	Where the "yes" applies, please describe briefly what kind of difficulties and problems in relation to the professional management you see for the flexible transport solutions for a) $-$ e):				
	It depends on the responsibility of the operator. If a (touristic, transport) association is responsible for the service, no difficulties are expected. If a municipality offers/establishes service, difficulties can occur in marketing & PR, operation, financial management, decision making because of lack of experience or lack of personnel resources. It might be difficult to bring all stakeholders together and manage cooperation. During the establishment of defMobil, marketing issue were assumed by its own marketing group. How intensive the management is also depends on the magnitude of the project.				







8.)	Sustainable transport within education	Yes	No	Partially	Don't konw
8.	Is transport and more specifically >>sustainable transport<< with all its facets an integral part of education in schools in your region?			Х	
	If yes, please describe briefly what you know/think is taught in schools about sustainable transport:				
	Elementary schools teach only general traffic education, but no specific awareness raising for the usage of sustainable mobility or how to use existing FTS offers of the region. The Tyrolean transport association offers cheap "summer tickets" for pupils to use the public transport services within the region during summer holidays.				
	Ambitious municipalities teach the topics climatic change and energy saving in the schools, where sustainable mobility is also embedded.				







9.) Awareness raising and information dissemination	Yes	No	Partially	Don't konw
9. Are there also other (out-of-school) institutions that provide education on sustainable transport and flexible transport solutions in your region?	х			
If yes, please describe briefly what you know/think is taught about sustainable transport in these institutions and how important they are in the region:				
The Regional Management as well as certain municipalities provide awareness raising within project developments or lectures (specific processes, project LAST MILE) – often in the frames of EU or nationally funded projects. This is especially addressed to the stakeholders in the region.				
Citizens are involved directly on special days or in offers for sustainable mobility to raise awareness (i.e. framework program on Car-free-day on 22 <sup>nd</sup> September each year, articles in press appearances about sustainable mobility (Flugs), establishment of new mobility offers, etc.)				
There is no specific "education" program for citizens about sustainable transport available.				







10.) Existing awareness	Yes	No	Partially	Don't konw
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?	х			
If yes, please describe briefly what people are aware of in respect to sustainable transport and why you think there is still a discrepancy between environmental ideals and effective transport habits:				
People are aware that sustainable transport saves the environment but few people actually give up individual motorized transport. Most people would like to keep high flexibility, especially in rural areas. They can still meet the high costs of individual transport. Also, the information dissemination of existing offers of FTS is insufficient. The current offers of public transport are not attractive enough, so people need to use their private cars especially on weekends or on evenings. Transport offer need to be extended, so that the second car per household is no longer needed.  Due to the LAST MILE project, the awareness can also be raised with the stakeholders side.				







# 5. Summary of barriers

### Main regulatory barriers:

- National legislation doesn't cover flexible transport systems such as car sharing, carpooling, seasonal/temporary systems. Just call/dial systems are generally defined by law. There are many gaps in legislation for the implementation which must be defined individually by each project. Geographical circumstance/conditions in rural areas are not considered in most cases.
- There are spatial limitations for FTS in rural areas; people outside the commuting area don't have access to the service (i.e. dial bus with fixed routing, fixed stops)

### Main institutional barriers:

- Due to insufficient legislation, individual contracting for each service is necessary, which
  entails long start-up periods for establishing FTS. The required concession is usually
  also an obstacle for the implementation if a municipality wants to implement FTS.
- Private taxi operators don't have the capacity to take over an additional flexible transport service during the seasons. It is often not financially attractive enough for a private operator to provide additional flexible services.
- Insufficient communication between relevant players is also a reason for difficulties while implementing/establishing a FTS. No win-win situation for all actors is possible.
- Political willingness is necessary for the implementation of FTS. Municipalities often don't see the importance of providing flexible mobility offers. The awareness of sustainable transport service is not at all high enough.
- The regional transport association has eventually recognized the importance of connectivity to the overall public transport routes and tries to implement FTS to provide those connections.

#### Main economic barriers:

- It is very difficult to make FTS financeable in the long term operation because of lack of
  management experience, permanent information dissemination and political willingness
  of relevant actors. In most cases, the implementation of a service is supported by
  national funding, after the end of the outside support, municipalities need to finance the
  service on their own; funding through tickets alone is often not profitable enough; it can't
  cover all additional costs.
- An additional barrier is the missing cooperation between institutions (municipalities and tourism), to share investment costs and gain all advantages for both sides. Involvement of tourism is essential for financing FTS.
- The municipalities get financial support from other institutions or associations. In most cases every institution/association has to cover one third of costs for sustainable public services.







#### Main other barriers:

- Pricing (minimum/maximum price) is not regulated by law. Private operators frequently charge high prices for flexible transport services, especially for tourism transport, which makes the flexible service unattractive for guests as well as residents.
- For the integration of local flexible services in the overall public transport is an evaluation and monitoring of the service important. Providing exact facts about the occupancy rate and the service is a valuable contribution to an adequate mobility offer in a region. This provides an exact and daily documentation of ridership. However, many operators don't see the importance of this tool. Without any facts and figures, the transport association won't involve local service.
- Cooperation between municipalities and the regional and national transport associations is necessary to provide a good public transport service in the region. Often the communication is insufficient between relevant actors.
- Information dissemination is often inefficient. Not enough awareness is raised with institutions, locals or guests to reduce the usage of private cars.
- The evaluation and monitoring of local flexible services is important for the integration of these services in the overall public transport system.







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# **Annex**

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# Glossary

# **Terminology**

<u>Public transport</u>: 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).

<u>Micro-Public Transport service (Micro-PT service)</u>: 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).

<u>Flexible Transport Services</u>: Flexible Transport Services or demand responsive services (also termed flexible transport solutions or flexible transport systems in the following) 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.).

<u>Last mile transport:</u> 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.).

<u>Touristic transport services:</u> The term "Touristic transport services" is quite broad and does neither specifies 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 of the bus-operator (depending on the operator, the call has to be made some time previously). On-demand buses also deviate from the routing compared to an ordinary bus line service (Austrian Federal Chancellery – Kraftfahrliniengesetz § 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 previously (Austrian Federal Chancellery - Kraftfahrliniengesetz § 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 a supplementary transport offer such 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 a limited time period (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 <u>company</u>, public agency or <u>cooperative</u> (Bundesverband <u>CarSharing</u>, n. d.). Carsharing may also be attractive from a touristic viewpoint and could potentially substitute the use of private cars.

### Carpooling

is <u>the sharing of car journeys</u> 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 bycicles which can be rented for a short time-span and usually within a bigger rental network (several rental stations). The rental works on a self-service basis. One important characteristic is that the bycicles 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 bycicles 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 attractive 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 are the most commonly used ones and were thus been briefly addressed. Since this enumeration is not conclusive it is possible to present and describe further flexible transport concepts. The questions in the survey are subsequently related to this/these other Flexible Transport Services.





