STATE OF THE ART AND THE FUTURE OF SMART TRANSPORT CONCEPTS FOR RURAL AREAS

The emerging trends and models, enabled by advanced technologies, concerning smart solutions for rural areas (with a focus on youth mobility)

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1. Scope and structure of the document

This work paper on "state of the art and the future of smart transport concepts for rural areas" (deliverable D.T1.1.4) aims at analysing the emerging trends and models, enabled by advanced technologies, concerning smart solutions for rural areas, with a focus on youth mobility.

The document has been developed under INTERREG Central Europe project "YOUMOBIL" and it is one of the deliverables of the Activity A.T1.1 "Identification of the gaps in the passenger transport network from a young person's point a view". It serves as an input to the definition of the strategy that will be adopted for the development of sustainable public transport in the rural areas specifically involved. The work paper focused on conducting a literature review of rural transportation programs and studying the experiences of rural transportation programs to identify promising practices, resources, and programs.

The subject of the study is the rural and peripheral context, in which we are interested in evaluating existing mobility solutions that meet the needs of users, in detail for young people, who represent the vulnerable category, due to geographical aspects: living in rural areas means not have a regular transport service, means moving with the car, means being enabled to satisfy their needs and being isolated.

The document is structured as follows:

- ✓ Chapter 2 – INTRODUCTION contextualizes the position and role of mobility in rural areas, presenting briefly its evolution
- ✓ Chapter 3 – RESEARCH METHODOLOGY describes the approach followed in the development of the survey
- ✓ Chapter 4 – APPLICATIONS ON MOBILITY discusses the state of the art of smart transport frameworks
- ✓ Chapter 5 – DISCUSSION (Analysis and evaluation of the projects reported in the previous section)
- ✓ Chapter 6 – OPPORTUNITIES AND CHALLENGES outlines the most promising processes and activities concerning mobility management, and warns against the limitations and problems arising within the new scenarios resulting from the adoption of the new technologies in urban and rural context. These opportunities and challenges shall be considered and tackled in order to be able to maximise benefits.
- ✓ References
- ✓ Appendices – PROJECT SHEETS

2. Introduction

The purpose of this issue short is to briefly illustrate the current role of mobility in rural areas, its position and trend.

Transport is a considerable challenge for many rural residents who cannot or do not want to drive or do not have access to public transport or other means of transport that satisfy their needs.

The promising rural mobility models, identified in this work paper, are designed to increase access to transportation, help populations overcome transportation barriers, and improve transportation safety or infrastructure. Rural communities can implement mobility solutions that combine different models, depending on the target population, the needs and characteristics of the community and resources. The role of transport in rural areas is a very sensitive issue to play, due to the scarcity of funds invested in rural areas, the customs of users, who are used to using their private cars to travel, and the lack of interest of transport companies in encouraging services in these areas. In many areas, rural mobility projects are already observable in the early 2000s. Some services started experimentally in the 1990s, and thanks to their success, they still function today. The spread of mobility patterns in rural areas has been particularly evident since 2010, when many districts, thanks to European programme funds, have had the opportunity to launch services adapted to the reference context. Subsequently, there is an interest of public and/or private companies in these services.

Transportation models to improve the availability of and access to transportation in rural communities include public transportation, volunteer models, on demand schemes, ridesharing, connector-shuttle services, mobility management and coordinated services models. These models help rural residents travel to schools, businesses, worksites, childcare, houses, recreational sites, and shopping, among other destinations.

A successful model for rural mobility, being smart, requires the cooperation of various factors. For instance, digital technologies and ICT are essential to have an efficient service that constantly meet the need of users and satisfy passengers of rural areas. Smart rural mobility, in particular for younger people, need a continuous flow of information from other mobility schemes, with the purpose to avoid the risk of keeping obsolete active services, being no longer close to the need of youngers (Figure 1)

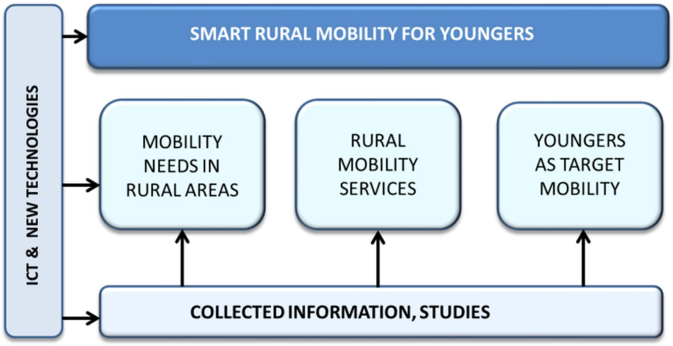


Figure 1 – Smart rural mobility scheme

In order to achieve the aim of analysing the opportunities for the improvement of public transport's quality and of defining innovative applications in the field of public transport in rural areas, we employed a research methodology that includes:

- ✓ publication research:
  - Google Scholar
  - Companies' reports

- Public Authorities reports
- Local public transport reports

✓ ongoing and closed projects research:

- projects related publications
- projects websites
- companies' websites
- Local public transport websites

The study's purpose is to report information about the state of the art and the future of smart transport concepts for rural areas, focusing on innovative applications of youth mobility. State of the art tools and solutions reported in this document are intended to support the implementation of pilot actions and the YOUMOBIL strategy, as well as provide the information to predict how demand for public transport will develop in coming years.

3. Mobility solution classification

The classification is a detailed collection concerning mobility solutions that comes as the first result of a more accurate analysis of the new rural mobility field, achieved following a desk research. The aim is to structure and summarize the main trend of the good practices in consistent manner to make easier to focus on examples of rural mobility and young people.

Firstly, the classification collects the good practices concerning mobility by function and by main aspects, located in and outside of Europe. For instance, one of the selection criteria was to select good practices for characteristics that are as close as possible to the objectives of the project, thus discarding a large number of practices, albeit interesting, but outside the project goals.

The classification outlines in detail the different types of mobility, types collected by main categories. Different categories have been managed by function performed (DRT service, Pooling, car-sharing), the promoter of the service (private company, transport operator, association, government), where the service is performed, the type of context (city, rural area, peripheral area) and the characteristics of the service.

Following the desk analysis, have been collected **139 pratices in 12 categories**. Many solutions are located in Central Europe, in the buffer area that includes Italy, France, Holland, the Netherlands, Belgium, Germany a large part in the UK, the remainder in the rest of Europe and the world.

It is important to underline that the ranking highlights the main stakeholders acting in the process, the added value and benefits induced by the service, as well as the tariff of the service.

Finally, the classification of solutions has revealed which practices have high technological support, which are best focused on young people and rural areas.

The categories of the mobility solutions analysed are the following:

1) DRT - Demand Responsive Transport
2) ISS – Interchange shuttle service
3) DRS – Dynamic ridesharing service
4) ST – Scooter Taxi
5) SR – Scooter ridesharing
6) ABS – Agile bike sharing
7) CS & e-CS – car-sharing and e-carsharing
8) E-LM – Eletric light mobility
9) I - Infrastructure
10) SDS – Self driving shuttle
11) S&M – Strategy & Management
12) MaaS – Mobility as a Service

3.1. Demand Responsive Transport

Demand Responsive Transport (DRT) or Dial-a-Ride, or even Paratransit, is one of the tools of sustainable mobility implemented in different realities to support public transport systems, especially in peripheral areas where demand is weaker and has not allowed an extension of the transport service sufficient to ensure a regularity. Thus, many rural, peripheral and mountain areas remain isolated both from large cities and from the main accessibility points (hospitals, stations, schools, shopping centres).

DRT are public transport service with flexible routes and timetable, has boarding point and the get-off at designed (conditional) stops or anywhere (it depends on service and people's request). The routes could be partially bound or unbound. There are different combinations and variations that

help customize the right mobility offer. DRT has a variable schedule, the departure time at important stops are fixed, or in some cases, there is no timetable available.

Only registered person, who has to pre-order the service (Call the ride), can use the transport service. In many cases request must be made within the day before. DRT has a charge or fee fixes, for every routes and set for that time and that day.

A more advanced form of DRT is the Supplemetary Ridesharing Service. This type of DRT run where public transport is missing, proposing as a major and stronger support of the transport service, its characteristics make it more like a ridesharing than a DRT. Rides are often run by volunteers, run by non-profit organisations or voluntary associations, who offer services especially to the elderly or people with disabilities. This service is very much carried out in rural and mountain areas. There are still today classic DRT schemes that provide for booking by telephone, without technology, used mostly in communities and villages, and supported by the public sector and volunteers. Alternative mobility services operated by local small-scale providers, but integrated with local public transport. These services are particularly suitable for areas with low or not systematic demand for short trips mostly in local areas. It can also provide a solution for linking rural tourist destinations with existing transport infrastructure, therefore supporting rural businesses and rural development.

DRT may perform **2 functions as:**

1) Integration of Public Transport

Integrating some public transport gaps. These services are particularly suitable for areas with low or non systematic demand for short trips mostly in local areas.
Alternative mobility service are operated by local and small-scale providers, and integrated with local public transport. They could be operated with several solutions: for instance with drivers' vehicles (car-pooling) or with vehicles made available for free by other institutions (voluntary associations, public authorities, etc.); in any case, the service is coordinated by a public authority (local Municipality, Mobility Agency or Transport Operator).

2) Supplement of Public Transport/Pooling

Another function of the DRT is to provide additional support to public transport in areas where the service is absent or with very low frequencies where the integration function alone is not sufficient. this third point can also play a pooling function depending on the type of service.
The Supplementary Service is an on-demand service that provides a door-to-door connection. It is carried out by taxi or minibus schemes on request, with drivers chosen by the community or offering their rides, to connect areas without transport with the main points of the city. It lends itself as a solution for the last mile.

3.2. Interchange shuttle service

This service is a further development of the classic form of DRT.It can simplify the interchange between two or more public transport systems or it can split the demand between two attracting sites on a bigger number of alternatives.This kind of service uses multiple passenger vehicles (buses and vans) or common taxi. Users can access the service via a specific application for smartphones, specifying where he would like to be picked up and drof off, the app communicates the precise location where the vehicle will stop, considering the specifications of the other users (it should be not too far). The trip is planned real time, also considering traffic congestion. The passenger pays a fixed rate of service. In addiction this service offers a fleet of minibuses that work between defined crowded spots of the city. This new multimodal mobility options can offer municipalities a way to improve PT use.

Depending on the type of service, the function it can perform is integration with public transport or pooling, so it is the same for the second function exposed in the next point.

Interchange shuttle service may perform **2 functions as:**

1) Integration of Public Transport/Pooling
This service aims to enhance urban mobility, public transport providers have started collaborating with private enterprises to better coordinate their service offering.

2) Supplement of Public Transport/Pooling
It acts as a supplement to public transport or pooling, depending on the reference service

A cheaper and more environmentally sustainable alternative is to use already existing trips as a feeder for public transit. Furthermore, integrated mobility system link disconnected point from public transport, due to rigidity of public transport organised on fixed routes. This complexity is known as “last mile obstacle”. The combination of LPT and sharing mobility allows for a door-to-door transportation, synchronizing bus or train and ride sharing.

3.3. Dynamic Ridesharing Service

Dynamic Ridesharing Service or DRS may it be considered as the smart and innovative evolution of the DRT. Dynamic ridesharing services follows the rhythms of the city in which users demand a fast, rapid, close movement and it is used purely in large cities.
The service is based on a mobile application that allows people to get arrangement in real time for sharing rides in urban area. A smart matching algorithm will provide, within a short time, the best matching between the driver and the passenger improving its suggestions overtime to better fulfil users’ expectations. It is new ride-sharing service, users download the app, can book a journey and start to travel.
Dynamic ridesharing allows travellers to arrange carpool trips through a personal device with a wireless connection to a ride matching system (e.g., a web platform). It uses inputs from both passengers and drivers pre-trip, during the trip, and post-trip. These inputs are then translated into "optimal" pairings between passengers and drivers to provide both with a convenient route between their origin and destination. After the trip, information is provided back to the service package to improve the user's experience for future trips. This kind of service uses multiple passengers’ vehicles (buses and vans) or common taxi. It is transport system with flexible attributes, representing a service with high-medium regularity; it works in urban areas and long distance as well.
Dynamic Ridesharing Service category encloses **three functions of transport**:

1) DRT/ Pooling

The dynamic ridesharing service has different features depending on the functions it performs: it can act as a DRT or pooling service, as it remains a service on request that can be performed independently by the users themselves or with a private driver. Is a mode of transport based on the sharing of private cars between groups of people, with the main aim of reducing transport costs. It belongs to the field of sustainable mobility, and the objective is to reduce the number of cars on the road.

Pooling is a type of ridesharing, which aims to optimize the occupation of the vehicle, as opposed to the car-sharing or taxi, which are used purely by a single user, and which has a short time use, since it is used for short routes, in journeys home-work or when you need to get to your destination in a short time.
The average time use of carpooling is around an hour or two, this shows that it is used for rapid or emergency requests. The boarding point has not fixed stops but can be anywhere (agreed by passengers). Newer services have different boarding point, the passengers share routes boarding in different parts of the city. The routes are unbound and change for every request. About schedule, pooling could be used anytime (agreed by parties). Pooling service can be used by registration on app with mobile phone that allows requesting the ride and book journey with pre-ordering set.
Every pooling service has its own charge target, so fee depends on the Company's choices and the Country of use.

Using App, members know number and seat reservation, driver ads, passengers advertising and waiting time. Through the App there is the possibility to use a service on request, with your preferences (time/destination), with collection points set by the user, at affordable prices such as those of an ordinary ticket.

2) Hitch-hiking/pooling

Hitch-hiking is a new on demand ride sharing offering ride to passengers who need to move from A to B. It maximize the number of passengers it can get in the car.

Hitch-hiking is done on the roadside (or gas stations) without organising rides beforehand, while ride sharing is typically agreed via websites and mobile apps. Travellers usually pay for the ride driver or share the gas/fuel expenses. If another passenger has requested a ride at the same time nearby or along the way, the app creates a route based on start and ends point for both of passengers. Hitching is taking hold as a form of social ridesharing, surpassing carpooling, is a service that starts from the instantaneousness of the demand. The benefits for the driver and for the hitcher include the saving of money.

Carrying a passenger on the trip and sharing costs can help reduce the amount of money you have to pay for tolls, petrol and parking. In addition, it save time and the environment. Public transport might be a solution to reduce carbon footprint and reduce transit costs, but sometimes, people prefer to use cars instead of waiting for the bus or train, because it takes a long time. Hitching means less cars on the road and less waiting time to get your own destination. Moreover, many cities have arranged carpooling lanes on the freeway to save more time. As social benefit it reach easier to get to places affordably, helping people find someone who's also headed in that direction at the time to take the cost and hassle of your regular commute.

3) Car-sharing

peer-to-peer car sharing service. Provide alternatives to car ownership through a portfolio of solutions.

3.4. Scooter Taxi

Innovative services characterised by a new electric taxi-scooter service. This service works exactly in the same way of common taxi but using a scooter and is particularly interesting in urban areas affected by traffic jams. The user is provided with an app through which he can check the availability of free vehicles, and ask or book a ride. Scooter taxi will take a leading role in linking the last mile. As other innovative services, the scooter taxi becomes a new ecological means of transport, reducing consumption, road occupation space, reducing car traffic, allowing short or long journeys. The alternatives of the service are different, moving from sharing to ridesharing, having the opportunity to use the scooter taxi service as a real taxi in a sustainable way.

3.5. Scooter Ridesharing

It is based on the same idea of ridesharing (car-pooling) but using scooters. It could be very useful for those who do systematic trips in urban area and want to share costs. It is essential to clarify that while the scooter taxi service is a profit service, it is a paid job with hiring drivers, the scooter ridesharing is a community service, whose members who have a two-wheeled vehicle, offer a ride with other members. the scooter ridesharing allows you to share the trip between divers and passengers who have in common that stretch, through a simple reservation via app. Many services use scooter pooling with **functions of supplement for local public transport**.

3.6. Agile Bike Sharing

Bike sharing is a common practice nowadays (above all in certain countries of Europe). Agile bike sharing means the introduction of all the innovative technologies to make easier the experience (localization systems, fast payment systems, bike-sharing, free floating, etc.)

3.7. Car-sharing/E-carsharing

Car sharing is an urban mobility service that allows users to use a vehicle on reservation by renting it for a short time, in the order of minutes or hours, and paying according to the use made. Set up from sharing economy, one of the most remarkable developments of the 21st century, let people rent in short-term cars. Car sharing covers multiple modes of sharing. It is distinct from ride sharing, which involves being driven rather driving. Car sharing offers value by providing vehicles that meet users' needs at a fair price.

The car-sharing service, following the positive cases found in large cities, is also suitable for use in small towns and/or peripheral areas. Increasingly, service providers are combinations of private and public operators, providing support to public transport (car, train), such as the possibility of using car-sharing near train stations, bus lines, or terminals.

E-carsharing may perform **functions** as Supplement of Public Transport.

This service is a combination of car sharing and electric cars, with the incentive of the free floating usage (e-cars can be parked in the same slots of ICE cars, but for free).

3.8. E-light mobility

Electric light mobility is a sector that is becoming increasingly important, especially in large and medium-sized cities, as an eco-sustainable, fast and economical service. In this category we refer to the use of light electric vehicles (used as private as well as sharing) and micromobility. On the first class today there are many services that offer sharing, while on the second is still being tested. As other innovative services, the scooter ridesharing becomes electric and is successful in cities where the use of the car is not customary, but prefers the use of soft mobility. However, we believe that the second category, which includes scooters, single-wheeled vehicles, hoverboards, are very attractive among young people, can be considered a **support of mobility** in certain areas.

3.9. Infrastructure

Providing mobility solutions is not just about providing services, but about increasing the physical supply of infrastructure. With the growing demand for users to cycle, with electric vehicles, it is reasonable to think in terms of sustainability and intermodality that such means, especially bicycles, represent a deep-rooted habit of many citizens. This allows us to focus also on transport infrastructures that are not intended as stations (train, bus) but of facilities dedicated to soft mobility such as cycle paths and bicycle parking and **facilities**:

1) Dedicated to bicycles

Many plans have involved soft mobility use in cities. First, soft mobility is often present or predominant as well in rural environments. Promoting the use of bicycles should be provided of equipment and infrastructure capable of satisfying demand and fleets.
Cycle paths network allow people to reach a great number of urban destinations. The importance of this model of mobility can be seen in large cities that can provide an alternative way of moving people to points of interest, decreasing traffic. In fact, large cities have organised cycle paths and bicycle parking near work points and stations.

2) Infrastructures dedicated to e-vehicles

Today, users encouraged by different mobility services, have the possibility to choose means of transport in many interchange points, not necessarily as stations. These new transport points are place where it is possible to choose a multi-modal service, connected to the territory. Similar to the infrastructure for bicycles, there are many dedicated infrastructure for vehicles, where you can find the simple carsharing car or more complex infrastructure, tested in some European cities.

In these points users can find battery charging for e-car-sharing, parking areas, or drop-on/off ridesharing points.

3) Multimodal Mobility Hub Point

Mobility Hubs provide a seamlessly integration in the transportation network promoting different modes of transportation, multi-modal supportive infrastructure, maximizing first-mile/last mile connectivity. Transport hub on neighbourhood level, where different sustainable and shared transport modes are linked with each other. It is a combinations of long distance rail, bike-sharing, public transport and taxi.

3.10. Self-driving shuttles

A recent mobility solution is autonomous vehicles, which are slowly changing the concept of mobility. The autonomous vehicles are addressed to both high-density neighborhoods oriented around walking and transit, and low-density neighborhoods oriented around cars. Until now, the vehicles are still being tested. The **functions** they will be required to perform is the Integration of Public Transport.

This kind of service acts as local Public Transport integration. They are rapid transit systems electric-powered with an on-board guide system that allows themselves to move without a driver. The path is set on the on-board computer and the vehicles have a series of sensors, which make them recognize external obstacles and allow safety operations. These vehicles, now, have been used for recurring routes in restricted areas but in the future, they could be introduced also in the normal vehicular traffic.

3.11. Strategy & management

Methodology strategy & management includes different services, ranging from coordination of services to integration and coordination of services and service management. Some integrate replanning scheduling and service rates, or they are platforms and/or tool for managing LPT services that coordinate existing transport services. The **functions** strategy & management will be required to perform is:

1) Platform to connect people for car pooling

A platform that, through apps, connects those who are looking for a passage and those who can offer it, identifying the collection points. An example of this type of strategy in carpooling is Rezopouce and the service AnciToscana.

2) Services coordination

This type of service aim to improve transport services on the basis of good practices in mobility and sustainable development, and they are often results from existing projects implemented in rural areas. Many projects provide to integrate transport services for metropolitan area and rural areas using extensive ITSs. The projects are very successful in terms of integration and management. Moreover, the introduction of an organising authority implies a large-scale level of cooperation between the different actors involved, with the mainpurpose of ensuring better rural – urban connection, through a public transport service with an integrated information service, ticketing scheme and transport timetable.

3) Services management

Service management consists of a platform, which organises dynamic mobility services, provides cities and operators with technologies and resources to help cities test new types of mobility on demand. Shotl helps transport operators and cities make a better use of its bus system by replacing low-ridership routes with on-demand shuttles. The management service is implemented by several

projects, which aim to enhance rural mobility connected in a single platform with transport providers in urban and rural areas.

4) ICT

The organisation of new forms of mobility involves the use of technologies to improve the users' approach to transport services. Many projects have promoted web platforms, websites, and panels to provide an interactive toolkit on the transport system, some types include sharing services. The installation of physical information points installed in the main points of the city, such as ferry terminal stations, etc., is also planned.

5) Marketing and Communication

Innovative mobility initiatives are accompanied by marketing and communication of public transport, in order to reach as many users as possible. In rural areas, where there is no a transport service, are used to establish a new relationship of trust between citizens accustomed to using alternative means of transport such as car, walking or cycling with the new mobility services.

6) Consultancy service

A consultancy service including research, assessing, planning, consulting and contracting using the innovative opportunity to package contracts together to ensure the contracting of equal levels of service across an entire region with a sparsely located population to meet the needs of that population

7) Supplement of Public Transport/Pooling

A new model of co-operation between the local partners and community transport providers in the region that will allow the transport service to grow under a centralised transport provision system for increased co-ordination, sharing, integration and management and the users to access transport services through one point of contact.

8) Digital services for car-sharing

Allows people to register their daily journey details online and search for others who are traveling similar routes and looking to car-share.The service is accessible to anyone and can be used for both regular commuter trips as well as one off journeys.

3.12. Mobility-as-a-Service (MaaS) Strategy

Mobility strategy services are the result of a revolution in mobility, born from the confluence of connectivity, autonomous driving and electrified transmissions. Increasing urbanization of populations around the world is causing a significant strain on existing city infrastructure, forcing people to find more-efficient manners of personal mobility.

MaaS or Mobility as a Service is integrating seamless end-to-end trip planning, booking, electronic ticketing, and payment services across all modes of transportation, public or private. MaaS platforms let user plan, locating, booking, and pay for each mode of transportation in just one-click and book door-to-door trips using a single app. Through MaaS, the mobility service would become available at reasonable cost for a wide range of people. MaaS provider can utilize the space in the vehicle to share the information. Because of MaaS, new types of business may flourish. Develop multi-task vehicles that reflect the characteristics of MaaS (including capacity efficiency, ease of getting in/out, cleaning, and maintenance)

The **functions** MaaS will be required to perform:

1) Supplement of PT/Pooling

Web platform or services promoted in mobility projects, where the focus is on rural areas and on the integration of multiple forms of transport in a single solution accessible on demand.

2) Ride-sharing/car-sharing

Private providers offer vehicle-leasing service for ridesharing or carsharing.

3) Multi-transport modal

Apps that brings every kind of transport together into a single intuitive mobile app, bus, tram, taxi, car bike etc.

4) Self-driving

Automated driving vehicle aimed to realize MaaS (Mobility-as-a-Service that utilize self-driving vehicles as service)

4. Analysis and evaluation of mobility projects

4.1. Methodology

As schematised in the figure 2 below, the strategy for the elaboration of the document aims at looking for new paradigms of sustainable mobility for young people in rural areas.

The methodology used for the development of the document is a linear approach that aims to find Smart mobility models for younger people.

We started from a basic knowledge phase of data collection and study, in which using the research sources expressed in chapter 2, informations that provide a general overview of current mobility experiences including best practices and projects (**"Mobility framework"**). This provides a general framework of the **139 mobility practices analysed**.

This has allowed us to identify which of the many existing solutions are most appropriate to our goal, achieving a **First level of knowledge** or **"Rural Framework"**. Among these solutions, key words such as rural mobility, vulnerable users, satisfying the needs of passengers were highlighted, allowing us to have a beginning level of detail on mobility solutions that are implemented in rural areas.

Subsequently the definition of this first level, a **second level of knowledge** of **"Reinforcement improvements"** has been obtained considering two qualitative input as:

- *Urban experiences*
- *technological aspects (ICT)*

The Reinforcement improvements is a second **level of knowledge** characterised by the rural background defined in the **first level of knowledge**. The mobility experiences in urban areas allow us to know many examples of innovative and interesting mobility, then the experiences with a high technological and digital profile necessary to achieve an innovative and cutting-edge service. It is essential to think in terms of digital technologies that are fast and within reach, especially if we are targeting young people, making the mobility service just a click away and easy to use

Taking into account existing best practices in urban areas and those with a high technological profile, the experiences considered can be intended as **reinforcing support conditions** from which to take an example.

Finally, finding a mobility model suitable for younger people also means thinking in sustainable economic terms. For the **third level of knowledge**, an economic benchmark has been considered.

A good model therefore collects these level exposed and perfects them by implementing daily mobility features such as apps at a "friendly" cost for young people.

The three levels joining new digital technologies, urban mobility solutions and economical requirements offer a **smart solutions for young people in rural areas**.

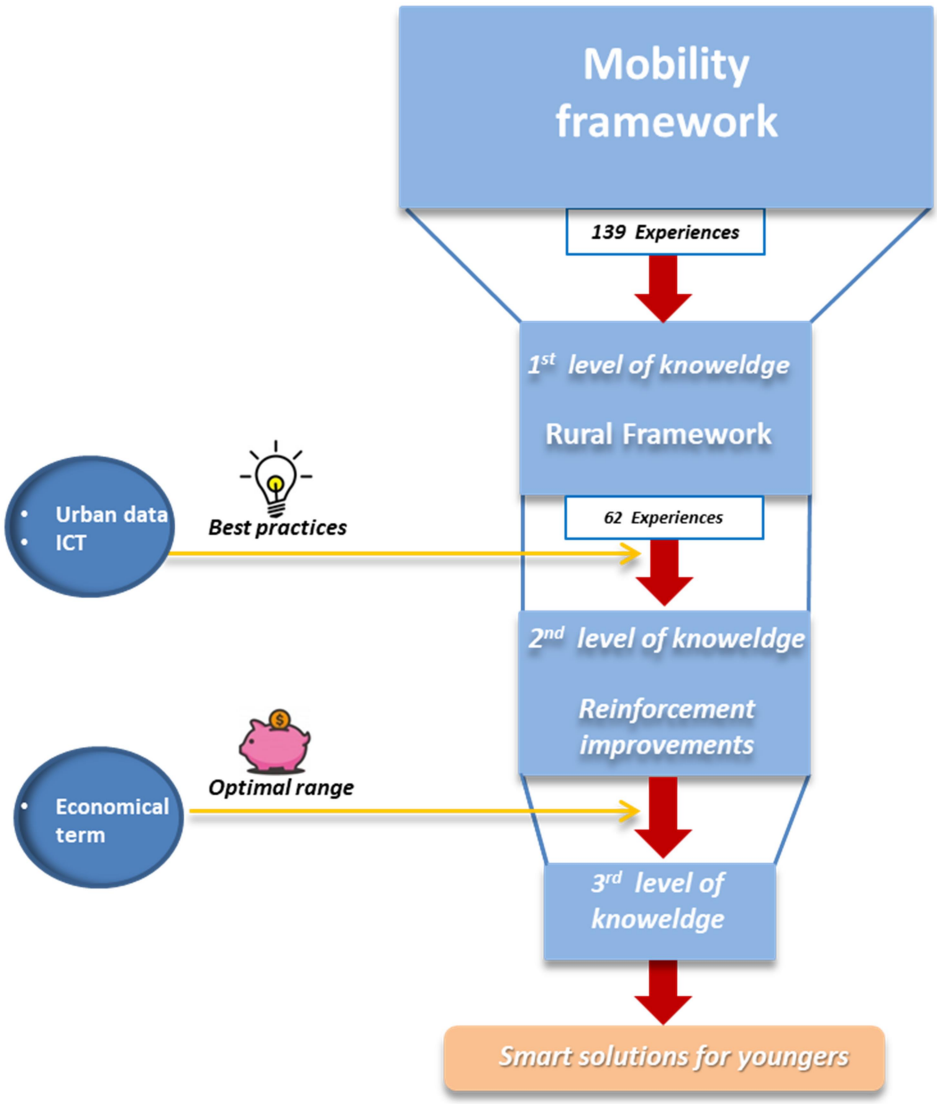


Figure 2 - A reference scheme

4.2. Description of the projects analysed

This chapter describes in detail the projects related to each mobility category, analysed in the previous chapter (3), reporting the main categories of each service.

Has been analyzed 4 states: Europe, China, the UAE (United Arabian Emirates), USA for a total of 139 projects. It is a general collection of all the projects analysed, which have been reported on the map, as shown in figure 3. The location is useful to understand both the *territorial distribution* and the *specificity of the category related to the type of service*.

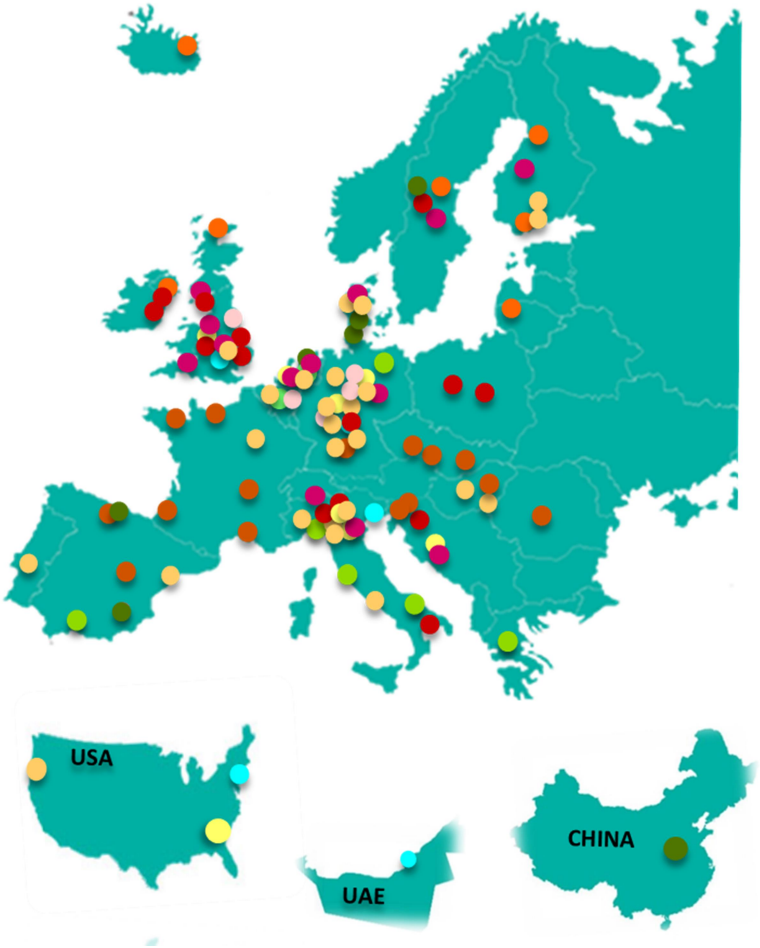


Figure 3 - Localisation of mobility solutions

The map allows us to make observations:

1. Cluster Transportation: the most active areas promoted by mobility services
2. Strong/Sensitive areas: the precise location of the areas in the reference States

E-mobility	
	e-cars, e-bike, E-LV

Innovative Mobility	
	Self-driving shuttle

Strategies	
	Maas
	ICT
	Service Management

Infrastructure	
	MobiPunt
	H2020 ELVITEN
	Cycle paths

Urban sustainable mobility	
	Bike mobility
	Car sharing
	Scooter taxi Scooter sharing

Flexible mobility	
	DRT/Pooling
	DRT/ Supplementary Ride sharing service
	DRT/Integration PT

Figure 4 - Legend of localisation of categories

The colors refer to different classes, shown in figure 4, in which the categories described in chapter 3 have been merged in the case of electric mobility. Electric mobility includes the use of cars, scooters, electric vehicles and bicycles both in private and in sharing

For the DRT category, the services listed in section 3 have been merged by function (integration, DRT, surcharge).

For infrastructure, the main project in the category "Vehicle infrastructure", which is H2020 ELVITEN, was preferred.

Urban solutions include projects that are implemented in the city area of bike promotion, carsharing, scooter taxi and ridesharing

4.2.1. Demand Responsive Transport

The classic form of DRT is still widely used in rural areas. The classic dial-a-ride service is still a suitable transport solution to allow the citizens of rural areas to travel. This service can be carried out in two forms: public service integration or supplement, depending on whether the public line is present or absent. The DRT is the mobility solution that is implemented completely in peripheral area, rural, in small communities. It is characterized by the absence of digital, where the reservation is still made by telephone reservation, and here has a rigidity of service: you need to book at most one day in advance, so you take into account that the trip must be booked time in advance, and does not allow you to use for upcoming services. The DRT is present in many locations, where it is both the local public authority and a local operator to manage the service. Among the services offered by the local authorities is the Transport Community, the Link Scheme, solutions in the form of a taxi service. Some services are promoted within projects at national and non-national level. It is interesting to note the variants of the DRT: a service is proposed in completely "new" areas, i.e. areas of Iceland, areas of Northern Europe such as the "North Jutland" area, many examples are active in Italy promoted by **aMo** (**Mobility Angecy in Modena**). The management model provides for the use of buses, minibuses (or van/minivans), or a taxi scheme, managed by the public authority by carrying out a ridesharing service (flexibility of times and stops), promoting an on-demand model, offering a connection with the **standard services (healthcare, work**) aimed at young and old mainly. In Germany and the UK there are examples of volunteering as "Citizen Bus Association", "**Connect2Witlshire**", "**Ring-a-link**". There are some examples dedicated entirely to young people, such as in Germany, in the Rural area of the UK "**Community Transport service & Link Schemes"** in Wiltshire & Swindon county.

Registered **associations** founded by citizens in rural areas following a **bottom-up approach** often offer DRT. Voluntary drivers are assigned in order to lower the costs for providing the mobility service that would otherwise not be profitable. There are different options of how to tailor the mode of transport. In several instance the service operates with minibuses (less than 9 passengers) as line-based transport. Also offering a citizen run taxi service is an option that is often chosen. Community transport "CT" involves a wide range of transport solutions created to fil a transport user's needs, usually run by voluntary for local communities on a not for profit organizations. "CT" provides a varied organizations in the voluntary car schemes, group travel services and door-to-door dial-a-ride services for individuals, wheels to work, demand-responsive or fixed route transport services.

The SRS is an alternative mobility service that operates in small geographical contexts, as these are sparsely populated areas, but the distance between two or more villages is considerable, making it difficult to travel.

This service is suitable for contexts with low or non-systematic demand with short-to-medium range travel. Today, the solutions adopted are divided into free vehicles from associations, public authorities, or with authorized private drivers who make their vehicle available for travel. Either in the latter, the driver can provide passages during a journey made by him or he can act as a real driver.

The purpose of this service is to provide a minimum service of travel in areas where people have difficulty in reaching the essential places such as **hospital, workplace, shopping center, station**.

For the development of mobility in rural areas, the concept of Transport Community was born, in which a mobility service is offered to citizens of villages, rural areas, peripheral areas, to reach their destinations.

It is in these areas that inclusive social phenomena are observed: given the low demand, transport companies do not intervene in providing mobility services (for various reasons, including low revenues and high costs to maintain the service). In this perspective, the organisation of the transport service changes, it is no longer the transport company but the private organisation (associations, volunteers) that together with the local authority provide forms of mobility. In County Cumbria, the local authority Cumbria County Council, in synergy with voluntary associations, has launched the "Voluntary Car Scheme", the "Rural Wheels" in which the driver is a volunteer, and citizens, members of the community, receive a service of **door-to-door mobility** to different destinations. In these cases, the choice of travel is linked to more essential reasons than those recorded in the city, in detail these services are used for a variety of purposes such as:

- improving and encouraging connections with buses or train stations
- medical or health-related appointments
- visits to hospitals or family members
- other (shopping, leisure)

The project offered in County Cumbria, is a reality that is not isolated to this area but is widespread in the UK. In fact, in many other rural contexts, this transport format has been promoted and started. The characteristics in these communities are similar, these are small towns, or communities extended over the territory with a poor transport connection or completely absent, where the car is the most used way to move. Not all inhabitants have vehicles to move around, and where the transport operator is absent, forms of volunteering have launched and promoted the mobility service as "Community Wheels" or "dial-a-ride". The target audience is varied but it is possible to identify a precise slice of people who need to move: adults and young people who go to work (the home-work route has a length that requires travel by a means), young people who move for study purposes, elderly people who do not have a car or who have disabilities.

The services offered allow you to have a flexible choice in terms of timetables and costs, saving on the weekly season ticket for public transport (sometimes more than one bus line) or on the cost of having a car (or more than one car).

Taking advantage of the availability of citizens in the community, especially in providing their free time, the voluntering car scheme offers to those who want (subject to authorization eligibility) the opportunity to promote themselves to drivers, who receive a refund fee. Reservations are made through a central reservation system or by telephone. Many of these services, in fact, offer mobility in rural areas but have not implemented a technological aspect.
The development of mobility services in other areas of Europe concerns the connection of villages in rural areas for the movement of elderly people. These rural areas (villages in Germany, Slovenia, UK, Italy, Poland) have characteristics similar to those exposed for the practice in Cumbria (UK), i.e. lack of public transport in rural areas, isolation with the main points of attraction (hospitals, schools, shopping centers, stations, etc.) both for adults and for young people, but especially the elderly. Promoting mobility in these areas means not only offering travel opportunities but also promoting social inclusion.

In Switzerland, the Swiss public transport company **Postbus** offers a transport alternative to connect sparsely populated areas by promoting service in remote rural areas (less than 100 inhabitants per square kilometre). The service is "**Publicar**" and is extended to more rural and mountain areas, and is active on Sundays, on call, by telephone reservation, indicating the point of departure and point of destination. The service is a combination of public transport line (network with fixed stops) but on call as a taxi (DRT), connecting in a circular way all areas with low demand.

In Germany, as in the UK, mobility services in the form of taxi **volunteering** have also been launched. In Germany, some practices are operated by unions of several transport companies in collaboration with local authorities, such as the **Mobilfalt** service in the Federal State of Hesse, car-pooling service as a complement to public transport. The objectives of the service are to encourage

sustainable alternative mobility (car-pooling) in rural areas, to reinvest profits in rural development and to make rural regions more attractive. These areas have undergone a phenomenon of migration to cities and a rapid increase in the seniority index. To make the service usable, Mobilfat uses its own booking platform, and bus stops of existing infrastructure. In this way, the service wants to increase accessibility, without adding additional lines, or generate more traffic frequency.

4.2.2. Interchange shuttle service

The IRS (Interchange Ridesharing Service or Shuttle Service) is an on-demand service, provided as an integral part of the public transport network, thus maintaining the connection between the various points of the city or area of application. Booking is done through apps and mobility platforms (**MyBUS DVG**), the starting point is subjective (depending on the user) while the destination is fixed (often a station or exchange point) promoting and facilitating multi-modal travel. Timetables are flexibility. Sometimes, this service can be carried out between two "significant" fixed return points, connecting users to the transport network via the point of departure and destination. The promotion in peripheral areas of the service, which have a rural characteristic but are much more densely populated, has seen the **collaboration of the local administration with the local transport operator** (or operators) (for istance **Suffolk Links DRT**), creating a network to promote the "Community Connection". It is clear that, in this second category, the objectives of the service also vary from different geographical areas (cities to peripheral areas or rural areas). In urban areas of smaller cities, or peripheral areas characterized by topographical and economic aspects different from the city, the service provides support to connect users to the bus route or train link, where the transport service is present, but has a low frequency, or the route does not have a good connection with the territory. Also for this typology, the costs are contained, similar to the stock exchange of a bus, for some services the fare can be calculated on trips that have the same distance. Services may vary depending on the area of distribution of the service, some solutions maintain flexible hours for a basic transport demand, while some have a reduction in the use of digital technologies. The challenge of the service is to provide support on the accessibility of the transport network, in a transport network that is not well connected to both the territory and other transport services, bringing benefits to peripheral and rural areas. Among the objectives is to increase the use of public transport, reduce the use of the private car, which in case of inability to reach their destination with PT, is used to move, naturally involving more cars in circulation, the need to have parking, the increase in congestion if we think at peak times and pollution. Interchange DRT is mostly used in small towns or rural contexts. In many examples, this type of DRT-scheme has been implemented as a solution to the "**last mile problem**" by supporting connections between strategic points of the transport system and/or cities with territorial collection points (**Very:Soon Connected University**). The services can benefit from financial support from local authorities, some services provide a tariff that varies according to the route, some are carried out by associations, where the driver is a volunteer (sometimes retired) who offers to accompany people to their destinations. Germany is the protagonist of many examples. In Duisburg, the public transport company launched its on-demand rides-haring service as an integral part of its existing transport network. The service is based on the digital platform of a second private company, implementing a fixed service (timetable and route) in a flexible service (Interschange shuttle).

The peripheral areas are witnesses of collaborations between transport operators and local operators (including municipalities, associations), converge existing initiatives in a new mobility solution. The target group of this category is narrower, aimed at adults who do not have a car or who do not have access to public transport, such as the elderly or young people.

Being a service that has a function of ridesharing and pooling, the cost remains borne. A considerable difference is in the organization of the service: if the routes and schedules remain flexible, and the cost is incurred, each area (even of the same service) is organized independently. In some areas, the driver is a volunteer, since that service is promoted by an association and not by a private company or taxi. In this case, the reservation can be made by phone with a short advance notice. In the latter case, the interchange shuttle has an almost additional function. In the transition from peripheral to rural areas there is a growing phenomenon of volunteering, at the

service of mobility, in which each city is autonomous in its own way in which it organizes the service.

In rural areas where there is no transport service, ridesharing takes the form of an additional service, supporting people who need to move but do not have their own car, failing to reach the workplace, or centers for medical visits or shopping.

In this type of ridesharing service, the organization of the service is based on forms of volunteering, associations, non-profit organizations. It finds applications in rural contexts, in villages, communities. Some services are **supported by the local authority**, both in the form of funding and as service providers. A successful example of Supplementary ridesharing service is the Burgerbus or Community buses in Germany. The service simplifies the exchange with multiple transport systems, **encouraging the inter-modality**, in this category, the city is still the seat of this service, but also begins to be experienced medium-sized cities. The operators' Mobility business models change, often there are associations of several private companies, and transport operators launch this type of service in peripheral areas, as in the case of some solutions in Germany and in the East UK.

This mode of transport is particularly suitable for young people, or workers, who make daily trips to move to the city (where there are places of work and / or study) and living in peripheral areas or purely rural, must go to the nearest station.

4.2.3. Dynamic Ridesharing Service

In urban areas, both for short trips and for medium distance travel, peer-to-peer service has been very successful in the form of ridesharing. Many companies, starting from the concept of sharing mobility, have replaced carsharing with ridesharing (or ridehailing in case the car is a taxi). The aim is to pursue sustainable mobility objectives (optimize urban space, reduce congestion, reduce vehicle pollution), and use a vehicle for more people by increasing the average occupancy coefficient of the vehicle).

Ridesharing allows each user registered on the platform of the service provider to indicate his position (pickup point), to choose the route (connection from A to B) and to choose the stop point (drop-off point) closest to his needs but also to the route recorded by the driver. These new mobility services can be understood as "Dynamic Ridesharing service", in which the companies promoting the service offer multiple and fast passages, using minibus/minivan/van (an average of 8 seats per vehicle), or a common taxi, in which the driver can be either a passenger offering his trip to share (SnappCar) or a driver (eg. **Moia**, **Allygator**, **VIA** etc.). The advantages for users are that they can instantly find a passage at the cost of a bus ride

The success is above all the combination of two elements: **moving quickly and the low cost**. The service that **works like a taxi but that has costs of a public transport**, allows you to have a choice to customize (in agreement with the driver) your route.

Service providers provide spacious vans that can hold luggage and travel for people with disabilities. The journey is built in real time. The services with the lowest prices are those present in large cities (due to the presence of public transport services present, competition from other public and/or private operators). Prices may vary for other services applied in other urban contexts: smaller urban areas, for example, where some services include a fixed instalment plus the cost of the service, which varies with distance.

These services have developed a new business model, both for technological use and for financial support, using onboard advertising that the user can download through the QR code on their smartphone, so the user receives discounts with affiliated parties to the service and the provider receives support from sponsors. The DRS is a smart evolution of two types of transport such as the classic DRT, being a service on demand in real time, and pooling, in the form of ridesharing service. Other types have found a place in the market, based on the same operation (peertopeer on demand) but aimed at promoting the "hitch-hiking" proposed by the service **Thumbz**, active in Belgium, which offers the opportunity to choose whether to be a "Hitch-hiker" or a "driver".) It is an on-demand and real time ridesharing, instant, quick service, it runs in a well-connected network, user has many transport alternatives. Passengers do not share the point of departure and

destination, but only a part of the journey. For short trips (it is suitable for daily commuting compared to the individual driving in your vehicle, of course each user chooses the point of descent closest to his destination point). Each provider manages the service through both apps and web platforms, with the aim of having a section dedicated to driver and passenger feedback. A further advantage is the possibility **to move in ZTL areas of urban areas**, forbidden to normal drivers, but made enabling (i.e. MOIA, Allygator)

Some providers, acting independently (maintaining the service privately) and/or collaborating with public transport companies, have reversed the ridesharing model into a service with the same functionality as rideshare (or rideshailing) but as an interchange shuttle. In this instance, the function is both of a pooling service (because there is passenger transport) but also of integration with the transport service. This service offers a passage between defined and established points of the city (identifying routes that have a high demand), using vehicles such as Van, Minivan, and Minibus.

4.2.4. Scooter Taxi

For the city, a good mobility solution is scooter taxi where where the **difficulty of parking and traffic** is considerable, eg. in the Netherlands (**Hopper**), or in the Italian city, Barcelona (Vesping), and is a suitable **solution for fast travel**, used a lot by young people.

4.2.5. Scooter Ridesharing

Similar to the scooter taxi and carsharing is the scooter sharing, which plays the same role as the previous service but is performed according to a sharing scheme, where the user is available to share the ride. It has been very successful, as demonstrated by **Scooterino**, one of the best examples started in Italy, where the first pilot from the city of Milan has provided numerous satisfactions so as to replicate the service in other Italian cities. Depending on whether or not the driver is driven, the service function shifts from classic ridesharing to pooling. The success is in the practicality, in the diffused distribution of the net of the fleet and it is particularly **suitable for the urban centers**, both Italian for their conformation (often made of ascents and descents), but we believe it can be used also for other historical centers of the European cities. The difference is in the habit to use the scooter as a means, which is a very used means in the countries of Southern Europe (or Mediterranean).

4.2.6. Agile Bike Sharing

Bike sharing is a common practice nowadays (above all in certain countries of Europe). Agile bike sharing means the introduction of all the **innovative technologies to make easier the experience** (localization systems, fast payment systems, free floating, etc.)

4.2.7. Car-sharing/E-car Sharing

In the analysis of carsharing services, we focused on those that could be of interest to us for the purposes of the project. we would like to make this clarification because the sharing services that exist today in large cities, especially metropolitan cities, are many, and not all are suitable for our goals. We have tried to find carsharing services in cities that are less canonical, and that offer different features: such as transport to and from the airport (with interchange function), or that offer support to young people to move to concerts and/or events (**Eventpool**). Interesting is the collaboration between private companies to launch innovative services especially for the use of hybrid vehicles or to cover more areas (**Green Mobility**, **Drive Now**, Fordcarsharing). In a few rural areas the carsharing service is active. There are still few private and/or public operators that have aimed to launch this mobility service in rural areas. Collaboration between partners is also found in the carsharing of electric vehicles (**E-Golf**). An alternative that is spreading is electric carsharing. There is a **collaboration between several private companies**, in which one provides the service (timetables, costs, etc.) the second has the fleets. This is the case with Greenwheels, which uses e-

Golf electric cars (in agreement with VOLKSWAGEN). E-carsharing services offer support to the connection of the transport network, where cars are located in strategic accessibility places where there is a high flow of people or where accessibility is potential but weak: often these are train stations, which for lack of infrastructure (parking and parking areas) could allow an intermodal exchange but are limited by network deficiencies. In this sense, carsharing and e-carsharing is becoming a **solution to improve accessibility**, **inter-modality** and first/last mile (**E-Vai**).

4.2.8. E-light mobility

The world of light electric mobility has been going on for many years and it is a direction of the current world of transport for the reduction of polluting emissions and for the reduction of congestion, reducing cars from the road platform. Today services that promote sharing of light electric vehicles are still a minority, due to several shortcomings of electric mobility (eg batteries). However, there are examples that have been very successful in the city and used by young people, such as **Mimoto** launched in Milan, Italy. These are electric ridesharing scooters, with the same advantages as the previous example. You register with an app and use the service. In addition, a branch of light electric mobility **is micro-mobility** which is widespread in many European countries, such as France, and outside Europe. However the great potential, we preferred only to mention the class of service, because in many cities the use is still debated by the current rules.

4.2.9. Infrastructure

An important element to allow multi-modality, in addition to providing transport solutions, is in the infrastructure dedicated to vehicles, both bikes and cars, or scooters (including electric), places in the city or near points of **accessibility** (parking lots, stations) where you can give users the opportunity to park their vehicle and use the transport system. The infrastructure is present in urban areas, where to allow the use of vehicles, especially electric, it is necessary to have some basic facilities, such as charging stations, special stalls for bicycles or two (or four) wheeled vehicles. Now, the connection points are mostly "mono-sector", where the infrastructure is dedicated to a single type of vehicle. A few years ago, the "**MOBIPUNT**" project was launched, promoted by the "Interreg North Sea Region" programme and various private companies, designed as a **transport hub on neighbourhood level**, where different modes of transport are available and connected to each other. The MobiPunt point is indicated by the reference column, where you can place your car or bike, wait for the bus, recharge your car or bike through the charging column, use the sharing service. The **ELVITEN project** promotes the use of light electric vehicles by providing **infrastructure and areas dedicated to vehicles**, such as charging areas, charging stations, parking lots.

4.2.10. Self-driving shuttles

Since 2016, a number of autonomous vehicle models have been tested. They have currently been tested in defined areas, such as routes between two airport terminals (**Ultra London**), or within campuses or large companies. Some of the latest examples have been launched in urban areas of the city. Some models were more successful (in cities with a defined and simple urban grid), while the test was more complex in American cities, where traffic is higher and the urban structure is different.

In addition, an example in India proved to be a failure. Autonomous vehicles are designed to provide travel, even to people with disabilities (**Autonomous shuttle in Bad Birnbach**), within an area (in the future in the city), which can function as a public service or on demand, with low emissions consumption and with a high employment rate. The absence of the driver is replaced by an artificial intelligence that makes the route, and through a hundred sensors, the vehicle recognizes obstacles outside (both vehicles and people).

4.2.11. Strategy & management

In addition, some of the mobility solutions analysed also include the service organisation sector. These companies offer a service to other companies or local authorities, such as managing schedules, routes, or offer a platform whose service a user can search and book. One category is dedicated to the **management and organisation of services**, while a second category of services concerns the use of digital technologies. In rural areas of Northern Europe (Iceland, Sweden Finland), technological mobility solutions have been put in place to encourage communication and access to information: **information panels**, totems, **web platforms**.

4.2.12. Mobility as a Service (MaaS) Strategy

MaaS is an incoming new mobility concept and that it exists at all is the result of profound technological and societal shifts, as the seamless, infinitely adaptable delivery of mobility, together with associated information, **digital ticketing**, and payment services, across all modes of transport. All of this is in near-real time - or predictively, wirelessly, securely and reliably. MaaS is a new model of economic business as well as being a transport model, in which it simplifies the many operations that today users are subject to do to make a trip (pay and book several different operators in different ways and at different times, from paper to digital, to smartcard, not find the physical point of purchase of the ticket).

Many services are launched and promoted by projects such as **My Travel Plan** (Mamba Project), Urbi involved in the project (IMove of Turin). Among these we want to highlight Whim, ViaVerde and **MVMANT**. **Whim** is an app that has had more success in use as MaaS and allows you to book multiple modes of transport with a single mode of electronic payment, ViaVerde in the same way. MVMANT is a smart mobity platform that allows users to move around and book their journey instantly. It allows us to perform a door-2-door service originally, picking up the user at a point as close as possible to his request, reducing the distance between the point of location of the passenger and the location of the vehicle that picks him up. In this way, the route is shared and customizable as a ridesharing, and the destination is the one chosen by the user, with greater or lesser geographical punctuality that depends on how many people are involved in the journey, in this way the driver can be more or less **flexible in the destination**. Unlike other sharing and ridesharing services, MVMant uses artificial intelligence to capture demand and effectively distribute supply to reduce the number of rideharing vehicles taking the user, thus reducing both the use of the car and the number of vehicles (in ridesharing) that travel with a single user, trying to **increase the coefficient of occupancy of vehicle**s by filling the shuttle as a DRT service. Finally, among the innovative methods is also in the way in which it is economically supported, thanks to the advertising present on each vehicle the individual passenger downloading the QR code gets a discount and through the sharing of advertising supports the service.

4.3. Analysis of the projects

Following the previous chapter, in particular the 3 and 4 help us to understand the technical and practical scheme of each category of mobility, reflections on the total of projects (139 examples collected) are presented here according to different aspects that include 8 characteristics.

New transport alternatives analysed are locate both in cities and in rural areas, and they are based on existing mobility projects that have already been implemented in many cities.

Reflections can be evidenced of different interpretations: geographical, demographic and technological, economicals etc.

4.3.1. Territorial coverage contexts

The mobility solutions listed are designed and implemented for different geographical contexts. By type of route, the service and the category covering that route are listed.

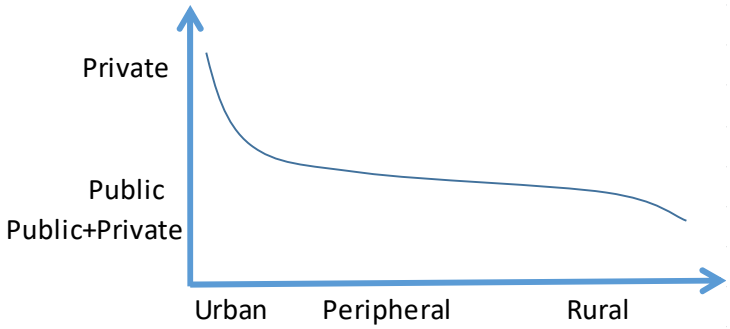
Route	Category or typology of the service	Some examples	Coverage and usability
Short Distance route	Dynamic Ridesharing Services, Scooter Taxi/ridesharing,Car-Sharing/Pooling, Supplementa Ridesharing, MaaS	Allygator Scooterino	MaaS, Carsharing and Scooter taxi has not yet been extended over long distances
Medium distance routes	ISS, Dynamic Ridesharing Service practies, car-Sharing, Car-Pooling,SooterTaxi, Scooter Ridesharing, ELV-s services	Hitch-hiking Wheels2work	Electric vehicles do not have widespread accessibility, carsharing is limited to stations, it is still inaccessible to rural residents.
Longer distance route	Voluntary schemes, community transport, DRT scheme, Supplemetary Ridesharing Service practices, Eventpool, taxistop, airportstop,GoOpti	Very:Soon, Eventpool Goopti	Many services are still inaccessible over long distances. Capillarity is still limited. The services have a "subordinate flexibility".

Table 1 - Routes and transport practices

4.3.2. Bodies involved

Many pilot actions are led by private companies, less by partnership (public or private).
As partnership, the first type of collaboration recorded began in 2010. Collaborations often arise for two reasons: to promote a service that has already begun or to launch a new service.

In the first case, collaborations are born when we have observed a success for that service, such as to capture the attractiveness of the business.
This interest has been observed both for startups promoting a service (through apps) and for more consolidated realities. Some good practices in rural areas launched by associative initiatives were then invested by private individuals or companies of PT.
Figure 5 on the right shows the geographical trend of stakeholder involvement in the different services, it can be seen that most private individuals are present in urban contexts, including rural ones (in coexistence with private individuals), while the public acquires a role in the transition from peripheral to rural.



The two tables below summarize what has been described, which services are promoted by the type of stakeholders, with a detail for public subjects identifying organizations, associations, etc.

The second reason concerns experiments that require more resources (time, human, energy) and the convergence of two private individuals can overcome the difficulties of implementation (especially in the beginning). In detail, partnerships take place for services that require large development funds, to launch services in remote areas never tested before, for innovative digital services, for services that manage multiple geographical areas.
With regard to public stakeholders, there are few student or school collaborations.
In rural areas are involved a large number of people, from associations, communities, particularly the residents themselves.
Concept of "community" stands out in the practices of rural areas by strengthening the transport network in a shared social mobility.
Voluntary associations, non-profit organisations and community transports, managed at local level with the support of public authorities, are very present. Local authorities such as the county council or the municipality also play a major role, showing great interest in the community.
The collaboration between municipalities and public transport takes place to identify the characteristics of the area, how to identify the demand for transport.

Table 2 - Types of bodies involved for each category of practices

		1-DRT	1-SRS	2	3	4	5	6	7 CS	7 e-CS	8	9 I-bike	9 I-veh	10	11	12
PRIVATE	Private	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Partnership between private companies								x	x	x			x	x	x
PUBLIC	Public	x	x		x			x		x			x	x	x	
	University-school			x										x		
	Voluntering ass.		x													
	no-profit organization		x													
	Project/program		x				x	x	x				x		x	x
	Community transport	x	x													

Public transport companies play a complex role in providing mobility services: when there is little supply, they have promoted additional services or launched ex novo services on their own initiative. Some public companies have joined Community programmes to strengthen the transport network in their areas of competence. Collaborations between private individuals have been observed in car-sharing services where different promoters have separate management of the service, the fleet and the digital. It has been observed that, as shown in figure 1 that the private interest decreases with the move from urban to rural, this involves two reflections, the first is that in semi-urban areas the coexistence of private and public services persists, for rural areas the services are carried out by private companies for certain variables (social, topographic, etc.) then the public or organizational sector intervenes. The coexistence of public and private can occur in rural, remote and/or mountainous areas

4.3.3. Best experiences from urban background

We have analysed active solutions in urban areas that include small cities, metropolitan cities and urban peripheries. Experiences are an inspiration point for spatial and transport planning, often many services are unsuccessful due to poor and inadequate planning. The city can undoubtedly be considered a large multimodal hub with a well-connected network. Sustainable solutions such as bikesharing and carsharing, in green and light-vehicle versions, are favoured to meet smog and land

use needs. Given the high demand for mobility, different companies promote services with similar characteristics and this has several advantages for the citizen: the low economic cost (for competitiveness), and the arrangement of many fleets, but above all it is interesting that the need to deal with many users pushes companies in trying to better meet the needs of the user. Cities are sources of technological and sustainable solutions and are close to young people with practices dedicated to young people. The solutions concern both the creation of services, with high technological performance, and with apps and digital platform (MOIA, Allygator, Door2Door), and above all they intervene on the infrastructure by creating new cycle paths connected to the stations, with bicycle parking lots, with boxes for recharging electric bikes and temporary storage of the same, the creation of areas for the transit of young people on their way to school. in many cities in northern europe, young people have been involved in practices for the use of micromobility vehicles and the encouragement of the use of bicycles. In Murcia (Spain), the local authority organised an exchange of bikes for people at risk of social exclusion could benefit from this innovative action. The aim was to help better plan sustainable mobility in the future. The participation of local NGOs and repair shops was essential in the organisation of the activity. Public transport provided new mobile app to give information on different options. In addition, intermodality is reinforced by means of a combined ticket for city buses and tram. To reduce the number of people commuting alone everyday, a sharing programme has been put in place. Many children and adults participated in the car free day. In Gexto, local authority has been working on the involvement of local residents in particular of children. The campaign aim to get safe the school path for students. In Hungary, the sustainable initiative aimed at encouraging students and adults to reduce the use of cars, creating the *school-pooling walking scheme (*Veszprém in movement for clean air*)*.The figure 6 show the main aspects (benefits and characteristics of all urban solutions examined).

economic impacts	environmental impacts	social impacts	impacts of scale
Traffic	Pollutant emissions	Social inclusion of people living in rural areas	Growth of co-operations
Balanced revenues-costs ratio	Use of green energy	Noise in urban areas	Active and participatory citizenship
	Grey area reduction	Increase in bicycle parking areas	
	transformation of parking areas into city use areas	Continuous network connection (information, news, monitoring)	

Table 3 - Main aspects of urban solutions

4.3.4. Technologies support

Concerning technologies uses, the large majority of mobility solutions in urban areas (cities and metropolitan areas) is based on the use of ICT that make smarter the choice of transport. Through apps, it is possible to book one or more trips with one or more providers, making the concept of intermodality more effective, a predominant feature of the trips to, from and to the city.

A massive use of technologies is observed in dynamic ridesharing services in large cities, and in MaaS services, which promote the total connectivity of services, combining payment methods, reservations and route management.

While they have the advantage of facilitating operations, reducing queues at stations, bus stops, creating a platform where the user can move easily and choose the most convenient way to move, it is not yet applied in rural areas, but still remains a service available in cities.

A disadvantage of practices in rural areas is the low use of technologies, although the service is well promoted in their own district.
The technological support remains a serious lack for many services active in rural, remote and peripheral villages, where the service is still promoted with schedules and rates on brochures, is active only the web service, is not expected to upgrade with App service. The implementation of technologies is observed in a few practices, which are often supported (and financed) by European projects. It is a matter of setting up an interactive web platform, apps, digital information totems, information panels.

The main role of ITS for standard practices is giving automation, data management, data processing and planning, ditigal ticketing, information in real time of transport (at different locations or on mobile phone).
ITS for sharing mobility practices (ridesharing, pooling, interchange) provide service management (booking, monitoring), management of platform.
ITS improves accessibility by reaching users more easily where the infrastructure and/or service fails, not immediately. The use of technologies is closely related to overcoming social inclusion, and their relationship involves the least or most participation in public transport, as the public transport becomes a means to carry out the need of users, but the use of ICT requires a minimum of technical skills if absent increase the gap between user and PT.

Practices involving the use of ICT have advantages such as:

- time savings
- comfort
- costs (monetary) savings
- inclusion
- environmental friendly impact
- automatisation of pricing and payement
- source-data
- high flexible service

From the technological point of view, the most appropriate projects **for rural mobility for young people** are

- MOIA – VIA – Allygator – ArrivaClick - SnappCar-Door2door **(**collected together for similar characteristics**)**
- MVMANT
- Mybus DVG
- V:ery soon Università Connessa
- Devon Fare Car
- PickmeApp
- Hopper
- Vesping/Scooterino
- Taxistop
- Drive Now
- E-vai
- Mimoto
- RezoPouce
- Whim
- UbiGo
- Via Verde
- Moveme Brescia
- Thumbz

4.3.5. Economic and financial aspects

The mobility services promoted in rural areas are supported by public funds, coming from local public authorities (municipalities e.g. Cumbria County Council, Devon Council, etc.), from private donations, sponsors and/or donations from private companies (not necessarily transport companies). For the practices promoted by volunteering it is necessary therefore a donation by passengers to the promoter of the service, related to the cost of fuel, and / or the driver to be able to keep the service active, especially in those areas where the service is completely free (E.g. in Slovenia the service Sopotniki). In agreement with the volunteer, the door-to-door services in rural villages allow to exceed the limit of the last mile (a problem present in the services in the city).

The positive feature is that many services, from DRT to ridesharing, both in urban, rural and peripheral contexts, have a sustainable economic approach. Some services that promote sustainable mobility for young people, apply tariffs according to a public transport scheme, in this way, does not change much in the habit of a user, making the service easily replaceable in its travel needs. It is possible to make tailor-made monthly, weekly, distance-based subscriptions. The concept of carsharing in rural areas is different. While carsharing is competitive in urban areas, in rural areas, carsharing services provide a minimum tariff on a mileage basis, to which several services are added. These aspects make the service usable for adults, workers, may not always be used for young people, who would pay more for the service.

From the analysis of good practices, it can be seen that in rural areas, services are created with the collaboration of several bodies, public and/or private, so as to contribute continuously to the funding. The rural communities of England, Germany and Scotland have a very strong experience in the economic structure of the business model, as demonstrated by the transport service that has been successful in that district for ten years or more, but despite receiving public funds, they have encountered difficulties in carrying out the service and in seeking forms of investment.

The DRS is a promising mobility service, promoted by private individuals, represents a valid alternative for rural areas, but the constraint in their implementation is in the economic feasibility of this service in less urban areas, where the private individual does not decide to invest their own service.

Interchange shuttle and supplementary ridesharing services involve private and public parties, making experimentation and implementation in rural areas effective and concrete.

Concerning the economic aspects, DRT has a cost similar to that of public transport. The exception is high cost per passenger.

Some types of transport communities, based on volunteering, provide for the possibility of using the service free of charge, subject to offer to the driver or price on offer to support fuel costs. The DRT service “ProntoBus” promoted by aMO (Agency for mobility of Modena) is completely in accordance with the needs of people who is asking the service. Occasionally, a constraint of the DRT can be the booking of the service, so those who book early are better served by those who book late. A second constraint that affects the cost of the service is low demand, thus making this service more expensive than ordinary services. A distinction should be made between the costs charged by the Operator (aMo) and Manager, which in some services such as Prontobus, may be different. The costs of Prontobus service are reported in the table 4, where differences in costs between ordinary services and the DRT service are highlighted.

	cost/pax	cost/km	rev/pax
Prontobus	8,52 €	1,60 €	0,97 €
Scheduled services	1,74 €	2,03 €	0,95 €

Table 4- Cost of DRT (the case of Modena)

Revenues per passenger are similar in Prontobus and in scheduled services. The costs (especially the costs per km) in Table 4 are those that "pays" aMo as or and not those incurred by the Manager which are obviously different.

For scheduled schemes, the cost of service to be paid by the operator is about 3 € per km; 2€ per km are the operator's income, 1€ per km is the revenue from fares.

Another observation is on the rolling cost, since the DRT services use small vehicles (typically 8/12 people) while ordinary services use mainly vehicle with a length of 12 metres; Prontobus use result less expensive vehicles. DRT has a cost/km less than scheduled services, thus let the cost of the Prontobus similar to the regular services.

In conclusion, while the costs per km of the two types are similar, the cost per person is the real penalty.

Carsharing services have a base rate with addiction of fare structured by zones, so carsharing may it be more or less competitive depending on the company that does it and where. Moreover, one of the limitations of carsharing is the absence or difficulty of finding parking, the use of a vehicle for each person who needs a means to move from A to B.

This limits of carsharing is overcomed by ridesharing services, giving a personalized flexible solutions to users, without worrying about parking or charging cars. It should be noted that a negative and limiting aspect of carsharing is that it is impossible to use the service when vehicles require the recharging of fuel.

Autonomous vehicles are the service with the greatest difficulty of realization from the economic point of view, due to the cost of the vehicle, the technologies, and the construction of the dedicated lane in case it is planned. This makes these vehicles still very far from real use.

4.3.6. Fare

Among the practices analysed, only 55 provide information on the tariff, while for a good part it was not possible to trace the cost of the service. However, it is a good result to note that all 55 services offer a service at a price similar to that of public transport (2-3€) or a custom-made price similar to that figure. In both cases, the cost of the service, which does not come close to €5 per route, falls within the range of € 5-7 roundtrip.

With the exception of a few services that provide for a charge on the area, for a mileage over 10 km the cost is in the region of 10-15 €.

The most economical practices are the services of DRS, ISS, DRT, ST, SC, MaaS

Carsharing or carpooling can be advantageous but in some practices you need to have a monthly, or annual, weekly subscription, in addition to the cost per km (or €/ h). This makes the service more usable by adults (workers) than by young people. The constraint is certainly the need for a driving licence.

Practices have a cost of the service such as that of the public transport service.

Just two services are totally free: Badenoch & Strathspey service & Elli

As regarding the economical topic, the most appropriate projects for rural mobility for young people are

- Door2Door services
- Bummelbus
- Flexitec
- Suffolk Links DRT
- Mybus DVG
- Badenoch & Strathspey service
- Community transports & Villages Transport Link
- Devon Fare Car
- Elli
- PickmeApp
- Dörpsmobil
- Proxibus & Telbus
- Scooterino
- Ecovolis
- Flinkster bike-sharing
- Autonomous shuttle in Bad Birnbach

4.3.7. Technologies support

Concerning technologies uses, the large majority of mobility solutions in urban areas (cities and metropolitan areas) is based on the use of ICT that make smarter the choice of transport. Through apps, it is possible to book one or more trips with one or more providers, making the concept of intermodality more effective, a predominant feature of the trips to, from and to the city.

A massive use of technologies is observed in dynamic ridesharing services in large cities, and in MaaS services, which promote the total connectivity of services, combining payment methods, reservations and route management.

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ITS for sharing mobility practices (ridesharing, pooling,interchange) provide service management (booking,monitoring),management of platform.
ITS improves accessibility by reaching users more easily where the infrastructure and/or service fails, not immediately. The use of technologies is closely related to overcoming social inclusion, and their relationship involves the least or most participation in public transport, as the public transport becomes a means to carry out the need of users, but the use of ICT requires a minimum of technical skills if absent increase the gap between user and PT. The use of technology also allows the inclusion of facilities such as GPS (for tracking bikes, routes recorded in e-bikes). Many solutions include Wifi in their vehicles (e.g. vans or minivans with wifi support).

Practices involving the use of ICT have advantages such as:

- time savings
- comfort
- costs (monetary) savings
- inclusion
- environmental friendly impact
- automatisation of pricing and payement
- source-data
- high flexible service

From the economical point of view, the most appropriate projects **for rural mobility for young people** are:

- MOIA – VIA – Allygator – ArrivaClick - SnappCar-Door2door **(**collected together for similar characteristics**)**
- MVMANT
- Mybus DVG
- V:ery soon Università Connessa
- Devon Fare Car
- PickmeApp
- Hopper
- Vesping/Scooterino

- Taxistop
- Drive Now
- E-vai
- Mimoto
- RezoPouce
- Whim
- UbiGo
- Via Verde
- Moveme Brescia
- Thumbz

4.3.8. Social aspects

Although ridesharing services are fast, cheap and they meet environmental sustainability objectives, they do not promote social connections. Mobility practices in rural areas do not promote social cohesion; on the contrary, isolated and individual displacement prevails, while the capacity of young people to isolate themselves within the urban area decreases, maintaining a continuous connection between young people and the urban context.

Where there is a greater lack of services, community services increase, in which the stakeholders involved also become associations and/or non-profit organisations.

On the contrary, rural ridesharing services, expressed in the form of community schemes, volunteering schemes, undoubtedly among the various benefits there is that of social cohesion, increased thanks to these different shades of service. This makes communities stronger and improves the connection of users, as well as helping to provide well-being even in the users who use the service.

Undoubtedly, users who show a cohesive degree are people who feel more participative also in the role of transport systems, and one of the objectives of the transport system (and rural) is to eliminate social isolation.

Dynamic ridesharing service connects young people with their urban context but does not promote much community inclusion. Interchange or supplementary services promote both community and individual cohesion, as well as scooter sharing for young people and some of the services analysed by DRT.

Social benefits are also promoted by infrastructure, for bicycles, electric vehicles or as intermodal points. The disadvantage of infrastructure lies in another aspect, namely vandalism, as recorded in Alba Iulia for the Smart move in Alba Iulia project.

- Bummelbus
- Thumbz
- Suffolk Links DRT
- V:ery soon Università Connessa
- Community buses in Germany
- Community transports & Villages Transport Link
- Rural Wheels
- Pick me App
- Connect2Wiltshire
- Citizen Bus Association
- The Village Bus
- Eventpool
- E-vai
- MobiPunt
- Rezo Pouce

- ICT Strategies
- UbiGo
- Whim
- MVMANT
- Move me Brescia
- ViaVerde Planner

4.4. Strengths and weaknesses

This chapter summarises aspects discussed in the previous paragraph (4.2 and 4.3) of 139 solutions examined, highlighting the strengths and weaknesses of all solutionsome from different contexts and concern different aspects of mobility. The DRT service has been divided into DRT service and its Supplementary service function named “Supplementary ridesharing service"

This part of the analysis, allows us to make deeper reflections on the benefits, advantages, positive feedback or not of the projects. This step is a link to be able to identify the best solutions suitable for the rural context from the solutions analysed, that we called in Metholodogy flow diagram “3rd level of knowledge”, and let us to link to 6 chapter about opportunity and challenges.

	S (+)	W (-)
DRT	High connection of rural and remote areas Supporting the connection of youths to several destinations High social inclusion Constitution of transport community Meet the needs of users Increase the market in some zones and its transportation functions Partnership between different bodies as Publit Transport public/private operators Avoid the use of private car Strong involvement of citizens flexibility of timetables and routes Develop specific bussiness model for each geographical background	Sometimes the fare is expensive Low demand and long waits Low ICT support Not offering instant services, no integration with other modes of transport Limited to few geagraphical markets No service use e-vehicles to realize this service Not always late extension at time The service not runs (not always or never) during night time
DRT as Supplementary Ridesharing Service functions	High social inclusion (promotion of organisations and volunteering) Involving links in remote towns and alpine areas Target also referred to tourists and youths Promotes the social inclusion of young people, also by promoting their integration into the labour market Public funds from local government, sponsor Widespread presence in rural areas Offer accessibility to the main points of interest in rural towns satisfying the main need of users Developping specific bussiness model for each geographical background Avoid the use of private car Social inclusion for all rural residents	Medium level of flexibility Not many times available Sometimes there is poor use of ICT Sometimes it does not always promote multimodality Often there area difficulties in raising economic funds No service use e-vehicles to realize this service Not always late extension at time The service not runs (not always or never) during night time
Interchange shuttle service	Increa multimodality and accessibility Concerning rural and peripheral areas Promoted by private and public companies Good presence of ICT Costs incurred	No youth targets were detected Coveraging small and medium distances (this can be constraining if you move to the peripheries) No service use e-vehicles to realize this service No late extension at time The service not runs (not always or never) during night time
Dynamic Ridesharing Service	Speedy and fast journey Real time information on traffic and Travelling instantly Inexpensive service Promote high level of accessibility for users and transport network Social engagement (has been osberved the Door-to-door service High flexibility Possibility to personalise the transport No major investments are required for the Avoid the use of private car Strong ICT (& AI for some practices) use	Concerning only urban context and not for rural areas Promoted more by private individuals Does not always overcome the problem of the last mile suitable for short-medium distances No service use e-vehicles to realize this service Not always late extension at time The service not runs (not always or never) during night time

Table 5- S/W of practies

	S (+)	W (-)
Scooter Taxi & Ridesharing	Moderate success for young people Fast, inexpensive, easily parking solutions	Not covering the rural areas, although in the city it is used by young people
Agile Bike Sharing	Costs incurred, easy parking than a car	Sometimes cities do not have suitable parking zones, vandalism
Carsharing/e-carsharing	High Emissions reduction Avoid the use of private car last mile overcoming e-carsharing is also present in rural areas affordable (time and costs) Strong ICT use	High costs (if basic service prices are present) does not reduce traffic, low occupancy rate of the vehicle Car-sharing does not allow you to travel from town to rural areas. E-carsharing presents the problem of battery life Not always late extension at time
EL-Vs sharing	Smart and ecological transport to move quickly with low emissisons Costs incurred	Geographical limitasion: now the service only runs in cities. Not always late extension at time
Infrastructure	Allow the use and the spread of electricity mobility (Bike, ELVs)	Widespread in the city, often there are no parking spaces for bicycles in the city or near stations, offices, shopping centers, vandalism
Self driving shuttle	Develop specific bussiness model for each geographical background Sustainable, high employment rate of vehicles,	Too expensive at the moment to realise
Strategy & Management	Strategies enable better management of transport solutions in an innovative way	Few rural areas are affected by transport strategies
MaaS	High level of multimodality and high integration Digital ticketing and use of ICT Booking a journey with many providers with one app Maximum degree of accessibility High involvment of stakeholders Involve PT Maas could improve to understand the potential Maas has invested in some rural areas	Few services experience MaaS medium-high cost to realise Maas solutions Have not yet been realised MaaS practices only addressed to youngers (this does not mean that it is not used indirectly,eing digital practices usable through apps)

Table 6- S/W of practies II

4.5. Cross-coherence

This chapter highlights the consistency of the categories (chapter 3) of all mobility solutions with users' needs. On the left are the main objectives of sustainable mobility, taking into account economic aspects (saving time and money), social aspects, accessibility, rural areas and youth movement.

The categories have been numbered according to the classification note in Chapter 3.

Regarding the category No 1 DRT was divided into the two sections DRT and SRS. The supplementary ridesharing service function of the DRT has been analysed, by virtue of the abundance of data, distinhguishing from private to public and community companies as they have different objectives.

Category 3 has also been analysed according to functions. Category 4 and 5 has been merged and category 7 has been divided into two sections about the traditional carsharing service and the electrical service.

Reflections:

- It is interesting to note that some areas of the graph remain empty where no service pursues those particular objectives
- While there are more aggregate areas where the same or more objectives are shared by many services
- Many services aim to gain time and money, which, although important, are no longer sufficient to achieve sustainable mobility.

GOALS	Categories of mobility practices							
	1- DRT	1 - SRS		2	3			
		Private company	community services,voluntary scheme,link scheme		DRT	Pooling	HH	CS
Young Accessibility		•	•					
access to local transport hubs as well as essential community and medical services, library, schools, recreation, etc.		•	•		•			
Offer mobility solutions for youngers		•	•					
Reducing transport costs					•	•	•	
Reduce the number of cars on the road	•				•	•		
Sustainable mobility	•					•		•
Optimize the occupation of the vehicle	•					•		
Urban areas and long distance as well	•				•	•	•	
Competitive with taxi	•				•	•	•	•
Not fixed stops		•	•	•		•	•	•
Maximize the number of passengers in the car	•	•	•	•		•	•	
Saving of money			•	•			•	•
Save time and the environment	•	•	•	•			•	•
Less cars on the road and less waiting time	•		•					
Real time travel				•		•	•	•
Simplify the interchange between two or more public transport systems				•				
multimodal mobility				•				
Last mile and first mile		•		•				
Volunteering scheme		•		•				
Avoid social esclusions		•	•					
Involving users to improve the design of new solutions		•	•	•				
improve mobility and service accessibility for residents in rural areas		•	•					
reduce pollutions	•	•	•					
economical isolation of people	•	•	•					
improve access between villages	•	•	•					
improve access between villages and urban centers	•	•	•					
optimisation of resourcesby efficient route and ride-matching and dispatching		•	•					
increase emphasis on the integration of rural transport services existing transport provision	•	•	•					
Enable mobility while providing an alternative to households instead of owning a second vehicle.	•			•				
Technologies that enable more efficient planning of journeys	•			•				
Real time travel information								
Systems and Solutions for Smart Rural Areas				•				

Table 7- Coherence goals

GOALS	Categories of mobility practices								
	4, 5	6	7 -CS	7 - E-CS	8 E-LM	9	10	11	12
Young Accessibility		•	•			•		•	•
access to local transport hubs as well as essential community and medical services, library, schools, recreation, etc.		•	•	•	•	•		•	•
Offer mobility solutions for youngers			•			•			•
Reducing transport costs	•	•	•	•	•	•		•	•
Reduce the number of cars on the road	•	•	•		•	•	•	•	•
Sustainable mobility	•		•	•		•	•	•	
Optimize the occupation of the vehicle			•		•	•	•	•	
Urban areas and long distance as well		•		•	•	•			
Competitive with taxi	•		•	•	•	•			
Not fixed stops	•	•	•	•	•				
Maximize the number of passengers in the car		•	•				•	•	
Saving of money	•		•	•	•	•		•	•
Save time and the environment	•	•	•	•	•	•	•	•	•
Less cars on the road and less waiting time	•	•	•		•	•	•		•
Real time travel	•	•	•	•	•			•	•
Simplify the interchange between two or more public transport systems	•		•	•	•		•	•	•
multimodal mobility			•	•	•	•	•	•	•
Last mile and first mile		•		•	•			•	•
Volunteering scheme								•	
Avoid social esclusions			•						
Involving users to improve the design of new solutions			•	•	•			•	•
improve mobility and service accessibility for residents in rural areas		•	•	•	•			•	•
reduce pollutions	•								
economical isolation of people									
improve access between villages									
improve access between villages and urban centers									
optimisation of resourcesby efficient route and ride-matching and dispatching									
increase emphasis on the integration of rural transport services existing transport provision									
Enable mobility while providing an alternative to households instead of owning a second vehicle.									
Technologies that enable more efficient planning of journeys	•								
Real time travel information	•								
Systems and Solutions for Smart Rural Areas								•	•

Table 8- Coherence goals II

5. Rural context: best practices and analysis

We analysed 139 practices (cap 4) and among these, **62 belongs to rural context.**

The rural context examined group different sensitive areas as small villages, small towns, remote rural and mountain areas

5.1. Localisation

Figure 7 shows the practices analysed in rural areas.

In red, the solutions that are carried out in rural areas but are not intended for young people are shown. In Green colour shows both rural and youth solutions.

The large number of points is due to two reasons: both to the considerable presence of solutions in rural areas and to the different locations of the same practice that is carried out in different areas: these are confined rural districts and neighboring cities.

The figure shows an abundance in Ireland, North Denmark, the UK, Germany and France. For Ireland, the UK, Germany these are different services with different locations for the same practice.

For France most areas are involved in the Rezo Pouce practice, followed by Communauto, Proxitub and Tibus. A positive result is the one present in Italy, where the following are evident in South Italy, in particular in zones called “Inner Areas”.

The areas with a greater number of best practices are located in Germany, which are rather scattered throughout the territory, taking several areas of the State.

The areas concerned are medium-sized cities, smaller cities, with a population of 10,000 inhabitants or small municipalities of a thousand inhabitants. One strong case is practices in the UK and Ireland. They involve rural areas, remote areas and peripheral villages (medium-sized towns but disconnected with urban areas) which offer a second opportunity for reflection. In these areas, practices have been in place for many years, moving adults, the elderly and young people. Another aspect is the strong economic support of the local authority that supports the service and support of the community.

5.2. Practices addressed to youths

The 62 rural practices relate to an extended target group, the elderly, adults, families, groups and young people.

In this paragraph we show which of all the practices in rural areas are addressed to youth.

The table lists the services carried out in rural areas and in which context dedicated to young people is reported. When the service is not aimed exclusively at young people it has been indicated with "not specified"; otherwise the services dedicated to young people are described to support university, school or other reasons (all needs).

The Table 7 lists the practices carried out in rural areas and addressed to young people, highlighting the way in which they are addressed to young people: whether they encourage transport for study/school, university, work or other reasons. For some, the way in which the service involves young people has not been found, even though support for youth mobility appears among the objectives, so it has been indicated with the item "not specified".

N. of services/Target	Rural areas	Young people in rural areas		
	quantity	quantity	Services (i.e.)	Context application (study (school,university), work, for all needs)
1-DRT	15	11	Prontobus Schemes Plustur The Village Bus Bürgerrufauto Tibus Public Transportation in Fjardabyggd Koli Shuttle Taxi	For all needs
			Billilinks Community Transport service & Link Connect2Wiltshire	all needs, school,work
1-SRS	18	12	Ring-a-link Local Link Tottenham-Dubbo transport Village Wheels community transport ProxiTub Anruf Sammel taxi Mobilfalt Elli Pick me App Beskidian County Union	For all needs
2	5	4	Suffolk Links DRT Freyfahrt Shuttle My bus DVG	For all needs
			Anruf Sammel taxi Rural Wheels	Work, school, all needs
			V:ery soon	study
3	6	1	Gopti	For all needs
5	1	1	Wheels2Work	work

9	5	2	Cycle paths Bike Parking Mobipunt	For all needs
11	11	3	Rezo Pouce	For all needs
			Smart move in Alba Iulia Shotl	
			Shetland's public transport networl	Not specified
12	3	3	Urbi Communauto MovemeBrescia	For all needs

Table 9- Number of services and target

5.2.1. Final remarks

Good practices in rural mobility are often related to conventional Public Transport and it is also extented to innovative mobility solutions based on ride-sharing scheme for the residents of a rural areas, for vulnerable social groups, visitors, tourists (this type make demand high variable). all the mobility solutions analysed include a wide reference area, ranging from remote areas to peripheral areas, countryside, country towns, counties, rural districts, alpine areas; although t there are a large number of practices, few are still addressed to vulnerable users who are youngers.

The pilot actions in rural areas aim to increase mobility services between rural areas and cities while limiting travel by private cars to protect the environment. They also seek to vulnerable target as youngers to move around more freely, thereby limiting social exclusion. Action includes development of an innovative mobile app to increase personalization and flexibility in commuting. This will be integrated with existing transportation systems and coordinated with local ride sharing systems and a new transport-on-demand service.

ICT solutions improving the efficiency of transport services and user information including bottom up or top down initiatives developed at the local level.

Concerning last and first mile, the aim is to collect passengers from their homes and transfer them to bus stops and train stations where regular public transport is available.

Related to projects involved in rural areas, they aim to promote sustainable "people-to-service" and "service-to-people" mobility solutions in rural areas. For instance, **many bodies will collaborate to improve the integration of existing mobility structures with innovative mobility solutions** like citizen buses, mobility as a service (MaaS) and ride sharing applications. The goal is to maximise mobility and accessibility of services in rural regions, while involving users in the process.

As regards bicycle infrastructure, some innovative and emerging examples are given in the document. Moreover, our aim is to provide sustainable and innovative examples but at the same time describe the condition of cycle paths in rural areas, check their presence, their condition and the state of use. By analysing the collection of information in the network, it can be seen that there are numerous cycle paths in use in rural areas, particularly in the Netherlands, Belgium and Germany. However, the Nordic countries are still strong in the presence of the use of bicycles, of which this habit certainly favors practices on the use of bicycles, including electric ones. This point of view helps us to make a reflection about the importance of **providing cycle paths to promote sustainable mobility**, representing a mode of transport affordable for young people, who use the bike for travel to schools, or stations. The actions analysed are an important boost to integrate the infrastructure of cycle paths **extended from cities to peripheral and rural areas**. One requirement is to meet the criteria of safety and practicability, providing the possibility of use to users both day and night. In fact, for this reason, some two initiatives use solar panels to allow lighting from renewable sources at night. Another requirement of the integration concerns the connection with the transport systems. Users who use the bike do so for short distances and sometimes the use of

the bike remains low if it is necessary to travel for miles to reach the nearest bus or train station. The infrastructure must be sustainably multi-modal providing the possibility to use more means of transport and parking to park your bike.

Long-distance services are still difficult to implement dynamic ridesharing services , whereas much of dynamic ridesharing services, carsharing services, scootersharing, e-LV sharing, have a considerable use in urban areas that offers a wide range of fast services, available for short trips and medium distance travel. This makes these listed services unattractive to rural areas. Finally, for urban areas and small distances, autonomous services are well provided.

On a geographical scale, some examples of transport solutions compared to other modes are widespread. In urban areas, the characteristics of displacement differ from those of peripheral and rural areas. Firstly, cities are more densely populated, places of work, and have higher traffic indices (vehicle and passenger). Therefore, the requests for movement find expression in rapid, fast and just in a click. The use of technologies is essential for those who offer a transport service to reach the user.

In outlining mobility services, it can be seen that Germany is the Country with the most services found, along with England and the Netherlands, that many concern rural areas, and that it also witnesses significant innovative social initiatives: **the concept of mobility becomes a community with a common interest in providing modes of movement for citizens in rural, remote and peripheral areas**. Positive results can be observed in Italy in the cities of Brescia, Venice, internal areas of Salento, Turin, Florence, Genoa, Milan, Rome, Modena, promoting flexible services for peripheral areas on call.DRS services offer the advantage of providing the user with a quick way to find a pass at the cost of a bus. It is extremely competitive with Taxi and also with services that offer this format (Uber, Lyft). In addition, in large cities they offer the advantage of an additional solution to the existing means of transport, providing more criteria for multimodal choice to the user.

Accessibility is an indirect benefit observed from the solutions analysed, in that some services explicitly aim at improving the **connection of the first and last mile**, while others provide an implicit improvement of accessibility.

The DRT service, which is very present in rural areas, is shown to be outdating compared to services currently active, especially on flexibility and ICT. Born as a service that offers travel where public transport is weak, has conditions of use semi-flexible if not rigid, such as the method of booking, often without digitization, still happen by phone, you need to book within a certain time and also the terms of cancellation vary from provider to provider. This has a negative influence on the use by young people, both for the economic terms and for the timeliness of use. In fact, today it is used a lot by the elderly, whose transport characteristics are not very variable and do not have timely needs.

In addition, carsharing also has many limitations, making it of little use to be used in rural settings. As contraints of DRT are the economic term and the constrained flexibility (to reach a share of demand for use), even carsharing does not offer adequate advantages of use. It increases the number of vehicles in circulation and keeps the occupancy rate of vehicles high, aspects that mobility companies have as their objectives to decrease. Other disadvantages of carsharing are the fact that it is limited for a certain distance, as it is not possible to use the car outside an assigned perimeter, or to find no available or loaded cars, or to have to provide for refuelling. For these reasons, they do not appear to be a viable solution for young people.

Particularly suitable are the ridesharing services, which also fit for young people, and for those who make many systematic trips, such as young people who move to work or study, and who live in peripheral contexts from the city center. These services allow to realize the multimodality, reduce the use of cars within rural contexts (the car remains the second support solution when the first chosen mode is not sufficient) and connecting the main points of interest (stations, workplaces) to the main points of towns. Among the **advantages of ridesharing services is certainly to contribute to improve the coverage of areas without public transport or to increase the transport network**. The interchange shuttle service (as a stype of ridesharing) also fits well in peripheral and semi-rural

contexts. Ridesharing service brings to the transport sector the advantage to improve (where it is lacking) and/or strengthening (where it exists) accessibility.

The process (method) considers the coordination and integration of the transport network (private and public operators), testing urban mobility solutions in rural areas. In order to do this, the tariff system, timetables, intermodality of each service, infomobility and the role of each service's technologies have been analysed, improving the flow of information for users, including through web-based applications and tools.

In closing, the management of the services and the actions to improve the smart mobility in rural areas, with a focus on youth mobility, should be supported by technological solutions. In this light, this document aims to provide an overview of the current state of the art of this field, focusing on concrete solutions that can be considered in each specific mobility sector.

Below is a list of the mobility services that are best suited for rural areas, whose category and function you are referring to

- Bummelbus (DRS – pooling)
- Suffolk Links DRT, Freyfahrt Shuttle (IRS – PT Integration)
- My bus DVG, University Connected, ADAC (IRS – PT supplement)
- Ring-a-link, Local Link, Tottenham-Dubbo transport service, SOPOTNIKI (SRS – PT Integration)
- Rural & Village Wheels, community transport services, Publicar, ProxiTub, Devon Fare Car (SRS – PT supplement)
- HIREACH Sud Salento, Dörpsmobil Pick me App (SRS – PT supplement)
- RegioTaxi, Texelhopper, Prontobus (DRT – PT Integration)
- Community Transport service & Link Schemes, Connect2Wiltshire, Bürgerrufauto, Tibusm, Koli Shuttle Taxi ((DRT – PT supplement)
- Rezo Pouce (Strategy & management – car pooling)
- My travel plan, Urbi,UbiGo,Communauto (MaaS – Strategy & Management)

Among these, we highlight the practices also addressed to young people:

- V:ery soon University Connected
- Devon Fare Car
- Elli
- Plustur
- Citizen Bus Association
- CallConnect Bus
- My travel plan
- Urbi
- Communauto/Bixi
- UbiGo
- Move me Brescia
- Scooterino
- Mimoto
- Wheels2Work

The latest practices listed are aimed at youth mobility, combining practices that are economically close to young people, supported by the use of digital technologies updated to the latest trends (web platform, Apps), are currently active in their own context of reference. They refer to different functionalities: they assist young people for general mobility, for study and for work, so it can be seen that they are able to satisfy part of the needs of young people.Table 6 and 7 collect the strengths and weaknesses of the practices analyzed for each type of category.Table 7 and 8 best shows an analysis of consistency between objectives of the practices, including offering transport to young people in rural areas, use of technologies, sustainability, in relation to the categories.

6. Opportunities and challenges

Nowadays there is a growing interest in providing transport services in rural areas with the aim of providing mobility to citizens, and the challenge of encouraging productivity, accessibility and tourism in these areas. This is possible through the collaboration of several bodies involved (public, private, or together), in which each stakeholder manages an aspect of the service, from the fleet of vehicles, to the races and schedules, to the management of the service. This common commitment brings benefits such as:

- to stimulate and launch services in areas where transport was absent
- to encourage and promote transport in areas where supply was weak but too expensive
- to be managed by a single transport operator

Stakeholders concerned are public bodies, private individuals, associations, non-profit organisations, vulnerable users (young and old) and adults. Their way of participating varies with the passage of different contexts (from urban to rural), but it can also vary in the same geographical context for different services.

The direction today is that of multimodality technology, to move with more means of transport with ease, abandoning slower services (on-call service by telephone reservation).

Many services offer transport-combining features of different mobility solutions, such as door-to-door service on instant demand with public transport prices. It is clear that we are trying to overcome the constraint of the first and last mile. The door-to-door service, present both in urban and rural areas, allows decreasing the last mile, especially services such as interchange shuttle service. An opportunity to move the first and last mile is in the electric micromobility and mobility, the first alternative is still in low use, the latter meets limits especially in urban areas, where there are still no parking spaces dedicated to bicycles and the charging points need to be upgraded. The Hub MobiPunt is an excellent combination of multimodality and a reduction in the problem of the first and last mile. It aims to increase basic accessibility by increasing connections with the railway network, the urban network (road and road), the additional network (cycle paths) and personalised transport (taxis, carsharing, scooter sharing). The transport using car-sharing services is overcome by the new ridesharing services, which are more comfortable for the user and cheaper. Those models could be advantageous to move people to rural areas, as it offers a more economical service than the current DRT service, but would risk remaining inactive for a certain time, due to the demand of rural areas, unlike the urban one.

The business models of a carsharing service moving from urban to rural context sees the participation of multiple companies (private or public) that manage the service. The same service has registered a new participation of stakeholders, in which the promoter of the service is neither in a public or private provider, but completely self-managed by the citizens of the rural village, based on volunteering.

This model was the only way to obtain the transport service in rural areas. The DRT service, in the transition from urban to rural context, has a change of characteristics, in the urban direction we switch to a service on demand based on instantaneous use of technologies, while the latter are lost in the rural passage and may have an increase in costs. In addition, service becomes essential in remote rural contexts. In term of security, sharing services (car, bike, and scooter) are the services most at risk of receiving damage, both for the absence of suitable parking areas, and for acts of vandalism. Carsharing and scooter sharing have been assessed as suitable in both rural and urban areas, while bikesharing remains limited to the city context (large or medium city), but not in rural areas, where the car is the first vehicle most used. Pooling or interchange shuttle service are the competitive services with the car in rural areas.

The new mobility paradigms, especially ridesharing, the MaaS strategy represent a valid challenge to compensate for the shortcomings of public transport. The Maas platform also allows to have information in real time on the arrival of the means of transport favoring a lower waiting time at the point of collection or at the stop, and to obtain the best route at the best cost. The best

solutions observed are flexible, low-cost mobility models supported by technology. The mobility services dedicated to young people are still a small number, dedicated to providing a means of transport for the home-work route.

In geographic terms, Germany is one of the countries offering the most services, especially for rural areas, where different services are tested according to the needs of the city context and the characteristics of the city. Many rural districts have experimented with new mobility services, and noting the success achieved, other districts have applied the same format to their context.

As Germany, the UK also offers numerous mobility services, many in rural areas implemented in different schemes, finding in pooling or taxi service the best way to provide rural mobility, to young people, to the elderly, even at a manageable price. In these services, now started, it would be possible to apply the use of Apps to facilitate the management and booking of the service. In addition, combining with a Maas system, the reservation of the service of ridesharing public transport timetables would be a remarkable information for users able to better manage the reservations of the service, both for the reservation of origin and destination. The Maas system could also provide economic support, reducing management costs (ticketing, smartcards), and using "Account based ticketing" technology.

The use of digital technologies (such as apps, web platforms, information panels) is no longer enough, but this innovative technology allows for a more efficient mobility service compared to traditional technological services, able to predict demand (analysis and forecasting of demand), using data analysis. In addition, autonomous vehicles allow reducing accidents and managing demand both as users occupying vehicles, reducing empty seats per vehicle, and to reduce vehicles on the road, reducing congestion.

Rural areas are now fertile ground for testing and exploring a business model suitable for small-scale mobility services, replicable in other contexts. For example, community transport services, poolin (car and van), and ridesharing service (dynamic, interchange, additional). In Europe, each state has been involved in different ways in planning sustainable models, especially for peripheral and rural areas. The promoters of the services are local public authorities, transport companies, individually or in collaboration, representatives of public interest (associations, forms of volunteering). They offer mobility services formats dedicated to a particular category of vulnerable or weak users, made such by the low presence of transport in their area, by age (elderly, young), or socio-economic characteristics (difficulty in owning a car or a vehicle, economic failure to use a taxi to travel). The characteristics of rural areas are similar, so the solutions found can be replicated with greater or lesser difficulty.

Good practices of sustainable mobility are applied in rural contexts, and play a key role in life in these geographical contexts, providing accessibility to healtcare, food, education, employement. Implementing transport services in rural areas translates into better social cohesion between citizens and between the citizen and the village, promoting **community engagement**. The success of the services is in the offer: to provide adequate support (timetable, line, and network) at an affordable cost, in fact the economic aspect is an important driver for the success of these services. In rural, peripheral areas, the cost of the service can often lead to abandonment and non-use, encouraging negative attitudes (negative feedback) of the citizen towards mobility (also sustainable). One of the risks is the failure to promote the abandonment of car use, which is widely used as a mode of transport because users in rural areas have a greater predisposition to use a private means of transport than public services (or sharing services).

Among the objectives of additional mobility, is to develop new forms of work, including unemployed people in the organization of DRT services (e.g. role of driver), or to provide mobility to refugees (HiReach), allowing them to move from rural and/or peripheral communities in urban centers.

Starting from the services carried out by volunteers, seen in the previous chapters, quite widespread in countries like the UK and especially in Germany, it is necessary to make an observation on the issue of governance. A limit is provided by regulations, different from each

State, which do not always allow the development of the same service in several Countries. This constraint is observed for the DRT service in Italy and some Eastern European countries where this service is not feasible.

From this constraint, it is clear that there is a need to standardise transport regulations in a common EU-wide regulation, which is an incentive for Member States.

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8. Appendix

8.1. Legend

The table below shows the acronyms of the categories used in the document. The table below shows the different functions performed by each individual service by category type. This acronym has been used in chapter 9 under "Code Category" for single table.

Code Category	Name of Category
DRS	Dynamic Ridesharing Service
ISS	Interchange shuttle service
SRS	Supplementary Ridesharing Service
DRT	Demand Responsive Transport
ST	Scooter taxi
SR	Scooter Ridesharing
CS	Carsharing
E-CS	e-car sharing
EL-Vs (or LEVs)	Electric light vehicles sharing
I-CP	Infrastructures dedicated to bicycles-Cycle path
I-V	Infrastructures dedicated to e-vehicles-Vehicle
SD	Self-driving shuttles
SM	Strategies and management
MaaS	Mobility as a Service

8.2. Subcategory and functions

The table shows the categories shown and the sub-categories. The sub-categories are to be read as the different functions of the service

Code Category	Sub-category or Function
DRS	DRT-Demand Responsive Transport P- Pooling HH - HitchHiking CS - Carsharing
ISS	IPT -Integration of Public Transport P-Pooling SPT- *Supplementary of Public Transport*
SRS	DRT-Demand Responsive Transport IPT -integration of Public Transport

	SPT- Supplementary of Public Transport
DRT	DRT-Demand Responsive Transport IPT -integration of Public Transport SPT- Supplementary of Public Transport
ST	-
SR	SPT- Supplementary of Public Transport
CS	-
E-CS	SPT- Supplementary of Public Transport
E-LM	-
I-V-MMUP	MMUP Multimodal Mobility Hub Point
SD	IPT -integration of Public Transport
SM	CP – Carpooling SC Services coordination ICS Integration and coordination of services SM Services management M management ICT Information & Communication Technology M&C Marketing and Communication CS consultancy service SPT- Supplementary of Public Transport CS – Carsharing
MaaS	SPT- Supplementary of Public Transport RS Ridesharing CS – Carsharing MMT multi modal transport SD Self-driving shuttles

8.3. Project Sheets

In this section we present a set of relevant projects concerning applications on mobility. For each project, we provide a project sheet with the following information: Project Name, Official Website, Led by, Start date, End date, Context, Budget, Funding, Contacts, Pilot sites, Main Goal, Objectives, Key Technologies, Motivations, Relevant Outcomes.

DYNAMIC RIDESHARING SERVICE

Project Name:	MOIA 
Code Category	DRS-DRT/Pooling
Official Website:	https://www.moia.io
Led by:	MOIA (company of VW group)
Start date:	2016
End date:	ongoing
Budget:	
Fare	basic price + €/km
Range Fare	5-15 €
Contacts:	-
Pilot sites:	Berlin (DE)
Description:	MOIA integrates carpooling and ridehailing. The ride is booked and paid for through the dedicated app, which in real time shows which vehicles are available in the vicinity and the estimated cost for the chosen destination.
Main Goal:	MOIA has been set up for the purpose of redefining mobility for people living in urban areas, offering molibity solutions to move people and increase rate occupancy. Reduce car on roads with a lowe cost than a taxi.
Key Technologies:	APP, ICT
Relevant Outcomes:	MOIA is the newest company in the Volkswagen Group. MOIA has started their final tests with ten electric shuttles in Hamburg, Germany.

Project Name:	VIA 
Code Category	DRS-DRT/Pooling
Official Website:	https://ridewithvia.com
Led by:	VIA
Start date:	2014
End date:	ongoing
Budget:	≥27 M (Private F)
Fare	basic price + €/km
Range Fare	5-16 €
Contacts:	-
Pilot sites:	New York City, Chicago, Washington D.C.
Description:	VIA provide first/last mile, school bus, transit desert, paratransit, and non-emergency medical solutions.
Main Goal:	Main goalsare reducing operational costs, traffic congestion, single-occupancy trips, and carbon emissions.
Key Technologies:	APP, ICT
Relevant Outcomes:	Recent innovations: Autonomous Vehicles, Electric Vehicles, Mobility-as-a-Service. ViA actually run in 20+ countries, 90+ partners, 32+ million pounds of CO2 saved. Via and the Port Authority of New York announce a pilot program to launch LGA Connect (2019).

Project Name:	allygator 
Code Category	DRS-DRT/Pooling
Official Website:	https://www.allygatorshuttle.com/en/index.html

Led by:	Allygator
Start date:	2016
End date:	ongoing
Budget:	
Fare	basic price + €/km
Range Fare	5 €cent/km
Contacts:	-
Pilot sites:	Berlin (3M)
Description:	Allygator service run as a taxi with a private shuttle price. Shuttle bus service that groups routes, the service pick up and drop off multiple people simultaneously or at different locations. Allygator app passengers can book a ride on our convenient shuttle bus. We calculate the ideal route that will quickly and comfortably take all Allied passengers to their individual destinations. And at a great price, which makes the ride with your car barely attractive.
Main Goal:	Main goalsare reducing operational costs, traffic congestion, single-occupancy trips, and carbon emissions.
Key Technologies:	APP, ICT
Relevant Outcomes:	Ridesharing service run by Allygator, receive in 2018 ADAC e Door2Door support

Project Name:	ArrivaClick 
Code Category	DRS-DRT/Pooling
Official Website:	https://www.allygatorshuttle.com/en/index.html
Led by:	Arriva UK
Start date:	2016
End date:	ongoing
Budget:	
Fare	basic price + €/km
Range Fare	5 €cent/km

Contacts:	-
Pilot sites:	Kent (1Y)
Description:	Innovative demand responsive ride-sharing service. Flexible minibus service that takes multiple passengers all heading in the same direction. Using our app, simply register your details and credit/debit card information, select your pick up and drop off and we'll do the rest.
Main Goal:	Main goalsare reducing operational costs, traffic congestion, single-occupancy trips, and carbon emissions.
Key Technologies:	Powered by the sophisticated technology of the global transport company Via Sharing
Relevant Outcomes:	Arriva is set to introduce ArrivaClick to the residents of rural area of New Lubbesthorpe from April 2019.

Project Name:	BummelBus  Bummelbus Forum pour l'emploi
Code Category	DRS-DRT/Pooling
Official Website:	http://www.fpe.lu/services/bummelbus/#bummelbus-informations
Led by:	Forum pour l'emploi (FPE)
Start date:	2001
End date:	ongoing
Budget:	
Fare	basic price + €/km
Range Fare	2-7 €
Contacts:	-
Pilot sites:	Ettelbruck
Description:	The Bummelbus is a means of transport on demand and currently represents in the northern region of the country, a supplement to public and private transport. The Bummelbus is organised by the "Forum pour l'emploi a.s.b.l. », a nonprofit association which aims to coach, support and occupy

	longtime unemployed people as drivers thus promoting the integration of jobseekers into the workforce. In order to be able to take advantage of this transportation service, you must: be a resident of a municipality that participates in the Bummelbus; register on the Bummelbus website.
Main Goal:	The project aims to improve social inclusion by re-education of unemployer for being drivers and to make them fit for the job market, and offering a mobility service as door-to-door trips by means of on demand minibuses for rural people, especially for elderly, young people and for those deprived of public transport. It works in cooperation with the partner municipalities, the Bummelbus.
Key Technologies:	
Relevant Outcomes:	Bummelbus has been operated in 39 municipalities with around 80.000 inhabitants in the northern (rural) region of the country of Luxembourg and there are currently 47 minibuses in service.

Project Name:	GoOpti 
Code Category	DRS-DRT/Pooling
Official Website:	https://ec.europa.eu/eipp/desktop/it/projects/project-11116.html
Led by:	GoOpti
Start date:	2019
End date:	ongoing
Budget:	1 M (Public Funding)
Fare	basic price + €/km
Range Fare	€ 14-200
Contacts:	-
Pilot sites:	Ettelbruck
Description:	The Bummelbus is a means of transport on demand and currently represents in the northern region of the country, a supplement to public and private transport. The Bummelbus is organised by the "Forum pour l'emploi a.s.b.l. », a nonprofit association which aims to coach, support and occupy

	longtime unemployed people as drivers thus promoting the integration of jobseekers into the workforce. In order to be able to take advantage of this transportation service, you must: be a resident of a municipality that participates in the Bummelbus; register on the Bummelbus website.
Main Goal:	It offers quick affordable transport on demand from/to rural and city areas to/from several airports/main train/bus stations in cities with airports.
Key Technologies:	
Relevant Outcomes:	Bummelbus has been operated in 39 municipalities with around 80.000 inhabitants in the northern (rural) region of the country of Luxembourg and there are currently 47 minibuses in service.

Project Name:	Tumbz 
Code Category	DRS-Hitch-hiking/pooling
Official Website:	http://getthumbz.com/
Led by:	Tumbz
Start date:	2017
End date:	-
Budget:	
Fare	basic price + €/km
Range Fare	-
Contacts:	-
Pilot sites:	Berlin
Description:	Service of Car pooling, specifically in Smart Hitch-Hikers. Users can choose if being in driving mode s or hitch-hiking mode.
Main Goal:	It offers quick affordable transport on demand for hitch-hikers with similar destination areas or same route parths. Help to increase car occupancy rate, save on individual costs, decrease traffic density, Cutting congestion ratio, reward active thumbers
Key Technologies:	

Relevant Outcomes:	Bummelbus has been operated in 39 municipalities with around 80.000 inhabitants in the northern (rural) region of the country of Luxembourg and there are currently 47 minibuses in service.

Project Name:	SnappCar
Code Category	DRS-Hitch-hiking/pooling
Official Website:	https://www.snappcar.nl/
Led by:	Europcar Group
Start date:	2011
End date:	-
Budget:	10 M€ (Last Investiment of Europcar Group in 2017) 8 M (Last Investiment of Tango in 2019)
Fare	basic price + €/km
Range Fare	-
Contacts:	-
Pilot sites:	France, Germany
Description:	Web platform offering a peer-to-peer car sharing service
Main Goal:	decrease the numbers of owned cars on the roads
Key Technologies:	-
Relevant Outcomes:	SnappCar, a peer-to-peer car-sharing community, recently inked a deal with private leasing companies to share private lease car. It promotes Drive & Share as good alternative for car ownership

INTERCHANGE SHUTTLE SERVICE

Project Name:	door2door
Code Category	ISS- PT Integration/Pooling
Official Website:	https://www.door2door.io
Led by:	Door2Door
Start date:	2012

End date:	-
Budget:	
Fare	regular price of local public transport
Range Fare	2,5-3,2 €
Contacts:	-
Pilot sites:	Berlin
Description:	Smart Solutions for the Future of Public Transport for many situations (evening and night transport, campus shuttle, commuter transport, suburban and rural mobility services, feeder service, digitalization of DRT services, rural mobility services, event pool, taxi pool)
Main Goal:	Door2Door help cities and transport companies transformt their mobility portfolio, delivering solutions and technology for your Mobility as a Service (MaaS) platform. The service provide also Data Analysis, planning e simulations to modelt a multimodal transport system.
Key Technologies:	-
Relevant Outcomes:	Door2door services carry ouy Multimodal Route Planner, Analyse, plan and simulate with Mobility Analytics & Consulting. Best App 2015" by Apple

Project Name:	Flexitec
Code Category	ISS- PT Integration/Pooling
Official Website:	http://ruralsharedmobility.eu/wp-content/uploads/2019/04/SMARTA-GP-FlexiTec.pdf
Led by:	Opérateur de Transport de Wallonie (TEC)
Start date:	2015
End date:	2018
Budget:	
Fare	regular price of local public transport
Range Fare	2-3 €
Contacts:	-
Pilot sites:	Wallonia

Description:	A good partnership between public transport operator and local partners. This allows it to work in a more cost efficient way.
Main Goal:	Providing mobility in rural areas for people with no access to a car, in a way as cost efficient as possible, integrating, private operators (supporting in a way local operators) and localities. Interconnections between shared and public transport services.
Key Technologies:	-
Relevant Outcomes:	In the future, normally from 2019 on, there will be an ICT approach at regional level.

Project Name:	Suffolk Links DRT 
Code Category	ISS- PT Integration/Pooling
Official Website:	http://ruralsharedmobility.eu/wp-content/uploads/2019/04/SMARTA-GP-FlexiTec.pdf
Led by:	Coastal Accessible Transport Service (CATS)
Start date:	2015
End date:	2018
Budget:	
Fare	Fares are based on average bus fare costs for journeys of the same or equivalent distance.
Range Fare	1,5-3 €
Contacts:	-
Pilot sites:	Rural area in Suffolk County
Description:	This service provides links to transport connections in rural areas. Connecting Communities is a transport service provided by Suffolk County Council designed to help people travel around the county of Suffolk who might not have access to a regular bus service.
Main Goal:	Ensure rural communities in Suffolk have daily access to transport services such as railway station and bus services as well as to local villages within the service area. Ensure rural communities in Suffolk have daily access to transport services such as railway station and bus services as well as to local villages within the service area.

Key Technologies:	-
Relevant Outcomes:	In the future, normally from 2019 on, there will be an ICT approach at regional level.

Project Name:	Freyfahrt Shuttle
Code Category	ISS- PT Integration/Pooling
Official Website:	https://www.door2door.io
Led by:	door2door and the city of Freyung
Start date:	2017
End date:	ongoing
Budget:	
Fare	Similar price of local public transport
Range Fare	2,9 €
Contacts:	-
Pilot sites:	Rural area in Freyung
Description:	On-demand ridepooling in rural areas. The journey in the minibus is shared with other passengers whose individual destinations
Main Goal:	Reduce dependency on private cars, partner with local companies to run an on-demand solution Benefit from our experience with mobility in rural areas. Provide flexible, affordable and efficient transport services that are accessible to everyone, and create transport links where there are currently none. Facilitate digitalisation in rural areas and Mobility 4.0
Key Technologies:	app
Relevant Outcomes:	

Project Name:	My bus DVG
Code Category	ISS- PT Integration/Pooling
Official Website:	https://www.door2door.io

Led by:	door2door
Start date:	2016
End date:	ongoing
Budget:	
Fare	regular price of local public transport
Range Fare	2,5-3,2
Contacts:	-
Pilot sites:	Duisburg
Description:	On-demand ridepooling service as a fully integrated part oft he public transport network. The service is implemented with a multimodal we platform app, DVG successfully transformed fixed-route and fixed-scheduled service into a personalized service.
Main Goal:	Give to people fulll access to the city's entire mobility, passengers can access all of Duisburg's existing transport options, compare them at a glance and buy tickets directly in the app, including for buses, trains, rental bikes and taxis as well as the on-demand service myBUS
Key Technologies:	app
Relevant Outcomes:	DVG is get to expand its passenger transport to include myBUS, DVG and door2door entered the next phase of their cooperation with the new multimodal app

Project Name:	Very:soon
Code Category	ISS- PT Integration/Pooling
Official Website:	http://www.verysoon.unicampania.it/
Led by:	Luigi Vanvitelli University
Start date:	2018
End date:	ongoing
Budget:	-
Fare	free
Range Fare	
Contacts:	-
Pilot sites:	Caserta, Santa Maria Capua Vetere, Capua, Maricanise, Aversa (South Italy)
Description:	Luigi Vanvitelli University luanched Verysoon as integrated transport system project, among the

	first European and Italian Universities, that links the cities where different departments are localised each others with free shuttle, carpooling and free parking.
Main Goal:	Aim to move students towards universities offices from the main railway station offering free shuttles and carpooling.
Key Technologies:	App,
Relevant Outcomes:	Awards: U-MOB network, 1st European Conference on Sustainable Mobility at Universities, Premio Università Paolo Iannotti 2016, "Success Stories" 2016 from Tabris.

Project Name:	ADAC
Code Category	ISS- PT Integration/Pooling
Official Website:	https://www.door2door.io
Led by:	door2door
Start date:	2016
End date:	ongoing
Budget:	
Fare	regular price of local public transport
Range Fare	2,5-3,2
Contacts:	-
Pilot sites:	Berlin
Description:	Smart On-Demand Shuttles to increase City Mobility
Main Goal:	advanced mobility platform to give the most efficient ride pooling configurations and efficient routes for passengers to reach their destinations.
Key Technologies:	app
Relevant Outcomes:	

SUPPLEMENTARY RIDESHARING SERVICE

Project Name:	Badenoch & Strathspey 
Code Category	SRS- PT Integration/DRT
Official Website:	https://www.door2door.io
Led by:	Badenoch & Strathspey Community Transport Company
Start date:	1999
End date:	ongoing
Budget:	£30,000 (receive grant funding from their Local Authority)
Fare	Payment is on a minimum charge or mileage rate basis
Range Fare	-
Contacts:	-
Pilot sites:	Highland Council in Scotland
Description:	Voluntary car services: the basic door-to-door service with paid drivers; then there are additional services that are based on the use of private vehicles or only certain destinations for which volunteers are used. This service is provided by Volunteer drivers using their own vehicles to get people out to vital life and health services, increasing their social interaction. To become eligible for the scheme, you must have no transport of your own and be unable to access public transport for whatever reason. Drivers are paid a mileage rate which is non-profit making and under car sharing legislation, so should not affect their car insurance.
Main Goal:	The scheme is run by the community for the community and meets the individual needs of people who cannot get out and about. support the transport needs of the local community.
Key Technologies:	-
Relevant Outcomes:	

Project Name:	Ring-a-link
Code Category	SRS- PT Integration/DRT
Official Website:	https://www.ringalink.ie/
Led by:	Ring a Link
Start date:	2001
End date:	ongoing
Budget:	£30,000 (receive grant funding from their Local Authority)
Fare	3£. Free holders and children under 5, 2 young under 16
Range Fare	2-3 £
Contacts:	-
Pilot sites:	Kilkenny, Carlow and Wicklow
Description:	Community mobility services in rural area
Main Goal:	Combat social exclusion by providing at least a weekly opportunity to travel for all people in the rural areas, improve access between villages and the main urban centres. Satisfy the needs of the target rural area as daily access to work and education from villages and rural areas; and access to essential services for vulnerable and isolated people.
Key Technologies:	-
Relevant Outcomes:	

Project Name:	Local Link
Code Category	SRS- PT Integration/DRT
Official Website:	https://www.ringalink.ie/
Led by:	Transport for Irelad (TFI) (by Natinoal Transport Authority)
Start date:	2001
End date:	ongoing
Budget:	-
Fare	prices may vary by area
Range Fare	1-7€ . Round trip: 2-15€

Contacts:	-
Pilot sites:	Kilkenny, Carlow and Wicklow
Description:	Local Link provides safe secure and reliable Public Transport services in local and rural areas of Ireland. There are 15 Local Link offices.
Main Goal:	Provides doot-to-door and scheduled bus services in towns, villages and rural areas.
Key Technologies:	-
Relevant Outcomes:	

Project Name:	Rural Wheels 
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.cumbria.gov.uk/roads-transport/public-transport-road-safety/transport/commtrans/ruralwheels.asp,https://eforms.cumbria.gov.uk/Runtime/Runtime/Form/Rural+Wheels
Led by:	Cumbria County Council
Start date:	2013
End date:	ongoing
Budget:	£170,000
Contacts:	-
Fare	
Range Fare	
Pilot sites:	-
Description:	Provides door to door transport for people who do not have, or are unable to access scheduled transport or have a volunteer driver available.
Main Goal:	offering molibity solutions to make connections with buses or trains (appointments, family in hospital) those residents living in rural areas of Cumbria without access to other public or private transport

Key Technologies:	Smartcard' to pay for travel and a central booking system to plan journeys
Relevant Outcomes:	-

Project Name:	Village Wheels
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.cumbria.gov.uk/roads-transport/public-transport-road-safety/transport/commtrans/ruralwheels.asp,https://eforms.cumbria.gov.uk/Runtime/Runtime/Form/Rural+Wheels
Led by:	Cumbria County Council
Start date:	2013
End date:	ongoing
Budget:	£170,000
Fare	
Range Fare	
Contacts:	-
Pilot sites:	-
Description:	Provides door to door transport for people who do not have, or are unable to access scheduled transport or have a volunteer driver available. Village Wheels is Minibus on demand scheme for resident people of rural parts of Cumbria.Currently 8 village wheels schemes run in Cumbria County
Main Goal:	Provides a timetabled service for communities to their nearest town and uses the Rural Wheels membership scheme, planning service for booking and smartcard for payment.
Key Technologies:	Smartcard' to pay for travel and a central booking system to plan journeys
Relevant Outcomes:	-

Project Name:	Community transport services 
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.cumbria.gov.uk/roads-

	transport/public-transport-road-safety/transport/commtrans/ruralwheels.asp,https://eforms.cumbria.gov.uk/Runtime/Runtime/Form/Rural+Wheels
Led by:	Cumbria County Council
Start date:	2013
End date:	ongoing
Budget:	£170,000
Fare	
Range Fare	
Contacts:	-
Pilot sites:	-
Description:	Provides door to door transport for people who do not have, or are unable to access scheduled transport or have a volunteer driver available. There are nearly 50 schemes set up across Cumbria to provide transport for all members of the community of any age (Under 18s must be accompanied by an adult). Each person could be a driver. The driver provide transport using his own car, and a paid full expenses at 45pence per mile will be offered to drivers.
Main Goal:	Voluntary Social Car Scheme is intended for those people who have no other means of transport. It provide a door to door service across the county to collect you from your home and take you to your chosen destination for a reasonable cost. The service can be used for a wide variety of purposes including; making connections with public transport, doing the weekly shop, medical appointments, or just for visiting friends.
Key Technologies:	Smartcard' to pay for travel and a central booking system to plan journeys
Relevant Outcomes:	-

Project Name:	Publicar 
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.postauto.ch/en/search/publicar
Led by:	Postbus
Start date:	1995
End date:	ongoing

Budget:	Public funding: Federal level, cantons
Fare	
Range Fare	
Contacts:	-
Pilot sites:	Switzerland
Description:	Service of transport in areas have between 5,000 and 10,000 inhabitants and cover between 50 and 1000 square kilometres Rural areas and small towns. Local to regional trips Dial-a-ride area can be booked by calling the freephone number.
Main Goal:	Dial-a-ride service that provide an alternative to routes operated in sparsely populated areas (less than 100 inhabitants per km2).
Key Technologies:	-
Relevant Outcomes:	In 2019 the service runs in 32 localities.

Project Name:	ProxiTub
Code Category	SRS- PT Supplement/DRT
Official Website:	https://tub.bzh/
Led by:	Baie d'Armor transports – Société publique locale
Start date:	2017
End date:	ongoing
Budget:	
Fare	1.5 €
Range Fare	
Contacts:	-
Pilot sites:	Saint Brieuc Armonr Agglomération (Fr)
Description:	Proxitub is a sub regional public transport service on demand. It is possible to chose among occasional and regular booking. This transport connects several proxitub stops to city centre, shopping mall, or common stops with regular public transport lines.
Main Goal:	It is designed to serve less dense neighbourhoods where demand does not justify the regular use of a public transport line.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Devon Fare car TRAVELDEVON
Code Category	SRS- PT Supplement/DRT
Official Website:	https://eforms.cumbria.gov.uk/Runtime/Runtime/Form/Rural+Wheels,https://www.traveldevon.info/accessibility/fare-cars/
Led by:	Private Hire cars
Start date:	2017
End date:	ongoing
Budget:	
Fare	1.5 €
Range Fare	
Contacts:	devonbus@devon.gov.uk
Pilot sites:	Devon (UK)
Description:	Shared public transport service in country wide with timetabled shared taxis within defined rural areas operated by Private Hire cars. The fare charged is slightly above the normal bus fare for the distance travelled. Fare Car is operated by local taxi operators by formal agreement with Devon County Council. It is needed to book in advance. Each scheme covers a designated rural area and serves specific points in the nearest main town e.g. supermarket, hospital, leisure centre.
Main Goal:	This enables passengers to book and pay separately but share the advertised timetabled journeys.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Community trans port 
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.traveldevon.info/accessibility/community-transport/
Led by:	Several bodies, voluntary organisations
Start date:	1990-2017* (the first services started in 90's, the latest in 2017)
End date:	ongoing

Budget:	Devon County Council grant £250,000 in 2017. The agreed budget for supported bus services in the fiscal year 2018/2019 is £5,231,112.
Fare	
Range Fare	
Contacts:	devonbus@devon.gov.uk
Pilot sites:	Devon (UK)
Description:	Community transport deals with many services for rural areas as *Ring and Side* schemes, *Community Car schemes*, *Community Bus Schemes*, *Devon Fare cars*, *Devon Wheels2work*, *Shopmobility*. All the services provide a door2door transport, or private hire car/scooter to go to work.
Main Goal:	Community transport in Devon aim helping people to move for shops,medical appointments,leisure,services allowing people in rural areas to overcome social esclusion due to rural context. Another objective is to support people who cannot access to public transport.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Anruf Sammel taxi 
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.traveldevon.info/accessibility/community-transport/
Led by:	Stadtbus
Start date:	1996
End date:	ongoing
Budget:	-
Fare	WestfalenTarif (3€)
Range Fare	
Contacts:	
Pilot sites:	Bad Kreuznach
Description:	The call collection taxi (AST) offers you mobility outside the travel times of city buses. You can book the service by phone 60 minutes before the desired departure.

Main Goal:	AST offers service as a taxi at the local public transport for night, weekend, holidays, or supports users in case of inconvenience on the lines.
Key Technologies:	-
Motivations:	-
Relevant Outcomes:	-

Project Name:	Salisbury and Amesbury taxibuzz
Code Category	SRS- PT Supplement/DRT
Official Website:	https://www.connectingwiltshire.co.uk/getting-around/bus/flexible-transport/
Led by:	Connect wiltshire
Start date:	2010
End date:	ongoing
Budget:	
Fare	
Range Fare	1.6-3.2 £
Contacts:	Connect2@wiltshire.gov.uk
Pilot sites:	Salisbury and Amesbury
Description:	Connect2Wiltshire is the name for flexible demand responsive bus and taxi services in Wiltshire. There are a range of services offered by Connecting Wiltshire Authorities. Salisbury and Amesbury link offer
Main Goal:	Provide the ideal transport solution for our various rural areas. It offer journey to Salisbury and Amesbury or between rural villages. It offers vehicle for wheelchair person and youngesr.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Mobilfalt 

Code Category	SRS-Supplement PT/Pooling
Official Website:	https://www.mobilfalt.de/
Led by:	North Hessian public transport company (NVV), municipal public transport ministry in WM
Start date:	End of 2012
End date:	ongoing
Budget:	Grant of € 1,000,000.00 (Federal State of Hess) in 2013, funding by the NVV. Additional public funds from the state of Hess of € 200,000.00 in 2016.
Fare	-
Range Fare	-
Contacts:	
Pilot sites:	five smaller towns in North Hessian
Description:	Project of the public transport companies in the Federal State of Hesse. The project has a limited profit-making ambition. Private cars then will serve the bus stops to collect passengers for carrying passengers within the town and its districts for one € per trip. Drivers receive a compensation of 30 Cent per kilometre. Service users can find the offered rides online on the NVV platform. If users decide to book a ride with Mobilfalt, a message (SMS) is sent to the driver, telling him that he has a passenger request. Mobilfalt orders a taxi for the user in order to ensure that the ride can be offered as scheduled. The test in pilot sites will be running for two years.
Main Goal:	The main objective is to contribute to stronger (and more attractive) rural regions; enable ridesharing of different people whose routes have the same starting and endpoint in a region that has limited transport solutions. The service aim to replace and complement public buses by private cars also.
Key Technologies:	NVV Platform
Relevant Outcomes:	

Project Name:	Elli 
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://www.mobilfalt.de/
Led by:	Komob Project and Local Authorities
Start date:	End of 2012

End date:	ongoing
Budget:	Funding of € 50,000.00 by the county administration (Public Funds from different Federal Ministries)
Fare	-
Range Fare	-
Contacts:	
Pilot sites:	Wismar
Description:	Elli offers a supplementary rides to the low-speed scheduled service provided by the local transport operator. This ridesharing service is a project implemented in several villages in addition to the existing public transport. Elli project coordinated by KOMOB and financed by the Federal Ministry of Research and the Ministry of Agriculture and the Ministry of Agriculture of Mecklenburg-Western Pomerania.
Main Goal:	The main goal ist o offer a public mobility solutions for peripheral and rural area, avoiding car use and promoting public transport into alternative form of mobility. The service is led by several means of managing as volunteering, digitalising of services and give to these area plus value into region.
Key Technologies:	App (testing)
Relevant Outcomes:	

Project Name:	Hospital Line 190
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://www.northernperiphery.eu/en/projects/main/&pid=&pg=2
Led by:	Ånge & Sundsvall Regional Hospital (Sweden)
Start date:	2007
End date:	2013
Budget:	€45 million to projects, of which €35.115 million in European funding (ERDF) will be available to partners in Member States (Finland, Ireland, Northern Ireland, Scotland, Sweden
Fare	-
Range Fare	-
Contacts:	
Pilot sites:	Ånge, Sundsvall (Sweden)

Description:	Improved bus service between Ånge and the regional hospital in Sundsvall. Booking is made on-line and the bus line has no fixed stops but picks up and drops off passengers along the route. The service is implemented in Northern Periphery Programme 2007-2013 (Rural Transport Solutions 4.5 EU Project).
Main Goal:	The line offers primarily transport for people with disabilities and special needs, but which has opened up to all other passengers if seats are available.
Key Technologies:	App (testing)
Relevant Outcomes:	

Project Name:	HIREACH Sud Salento
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://hireach-project.eu
Led by:	HIREACH (Horizon Eu project 2020)
Start date:	2017
End date:	2020
Budget:	€45 million to projects, of which €35.115 million in European funding (ERDF) will be available to partners in Member States (Finland, Ireland, Northern Ireland, Scotland, Sweden
Fare	Fare change according to service considered
Range Fare	-
Contacts:	
Pilot sites:	The municipalities of Guarda and Torres Vedras (Portugal), Buzau (Romania), the district of Naxos (Greece), the region of Baden-Württemberg (Germany), some areas of Luxembourg and the internal area South (Italy)
Description:	HiReach offers many business models for different mobility services (e.g. community transport services, ridesharing, minibus/van pooling, etc.) that can be provided at affordable prices and/or with minimum subsidies.
Main Goal:	Improving accessibility and public transport in priority areas such as rural, peri-urban, suburban and disadvantaged areas. The aim is to aggregate and optimise particular, diversified and geographically dispersed travel requests in order to favour more

	inclusive and participatory forms of mobility by local communities.
Key Technologies:	App , web platform
Relevant Outcomes:	

Project Name:	Dörpsmobil
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://hireach-project.eu
Led by:	HIREACH (Horizon Eu project 2020)
Start date:	2017
End date:	2020
Budget:	€45 million to projects, of which €35.115 million in European funding (ERDF) will be available to partners in Member States (Finland, Ireland, Northern Ireland, Scotland, Sweden
Fare	€/ hour plus € 5.00 per month of fixed registration fee in the service. The prices depend on the number of registered users, the number of hours of use.
Range Fare	€ 3.50/h
Contacts:	
Pilot sites:	Klixbüll (Schleswig-Holstein - Germany)
Description:	Electric carsharing associated with a transport service with driver. Service implemented by non-profit organizations (citizens, local businesses, the 'municipal administration), which have leased the car to share. All members of the association can book and use the shared electric car as long as they do it in advance. Booking is made by phone reservation.
Main Goal:	Provide an additional environmentally sustainable transport solution in an area that is strictly farming
Key Technologies:	
Relevant Outcomes:	The solution was replicated in other small rural towns in the state of Schleswig-Holstein.

Project Name:	PickmeApp 
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://hireach-project.eu/content/italy
Led by:	HIREACH (Eu Project Horizon 2020)
Start date:	2017
End date:	2020
Budget:	€ 2.024.875
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Potenza (ITA), Salerno (ITA)
Description:	PickmeApp offers a new urban mobility service based on sharing. If you have difficulty posting children and/or seniors, you can book the service.
Main Goal:	It allows you to organize trips to different destinations especially dedicated to vulnerable users, In addition, it works as a ridesharing service.
Key Technologies:	ICT and App
Relevant Outcomes:	-

Project Name:	Beskidian County Union 
Code Category	SRS-Supplement PT/Pooling
Official Website:	https://www.mambaproject.eu/existing-mobility-services/
Led by:	Beskidian County (Local governments South Poland)
Start date:	2017
End date:	2020
Budget:	

Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Bielsko District
Description:	Common union, linking transport at the municipal, county and voivodeship levels. By merging their public transport services they can bring more people from rural to urban areas.
Main Goal:	It allows you to organize trips to different destinations especially dedicated to vulnerable users, In addition, it works as a ridesharing service.
Key Technologies:	ICT and App
Relevant Outcomes:	-

DEMAND RESPONSIVE TRANSPORT

Project Name:	RegioTaxi 
Code Category	DRT - IPT
Official Website:	https://ruralsharedmobility.eu/
Led by:	Local Municipalities and public transport authorities
Start date:	2010
End date:	2013
Budget:	-
Fare:	Regiotaxi is a relatively expensive
Range Fare:	-
Contacts:	-
Pilot sites:	Rivierenland region
Description:	Regiotaxi is essentially a regional taxi service that operates in several regions in The Netherlands. The service is essentially a door-to-door service that picks up a user from an origin point (e.g. home) and takes them to their destination. The system has no fixed stops or routes. Other travellers may also be

	picked up en route, which means that Regiotaxi is able to charge lower prices than conventional taxi competitors. Regiotaxi first started out as a last mile connection trial by Netherlands state Railways in 1989 ('Treintaxi').
Main Goal:	Enabling people to have door-to-door access to destinations as required (or to access mass transit as required).
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Prontobus
Code Category	DRT - IPT
Official Website:	https://www.prontobus-rumobil.eu/
Led by:	aMo (Agenzia per la Mobilità di Modena)
Start date:	2007
End date:	ongoing
Budget:	€ 780.000/y (all the 6 services)
Fare:	Same fares of scheduled services
Range Fare:	
Contacts:	-
Pilot sites:	Modena (ITA)
Description:	The service must be booked by phone, stops are marked with the service's logo and an identification number that must be communicated at the time of booking. It is compulsory to book the trip by phone within 30/60' the departure time, the trip is planned in accordance with the needs of customers.The service is entirely flexible and allows all possible movements to and from the collection points of the network. Pronotbus service are active since 2007 in Modena, the service has received considerable support from the RUMOBIL project.
Main Goal:	Support functions for scheduled services, connecting sparsely populated areas, and therefore areas with low transport demand, to the capital cities and to the stops of scheduled services, along routes otherwise not served by public transport.
Key Technologies:	App Prontobus RUMOBIL
Relevant Outcomes:	-

Project Name:	Billilinks (Villages Transport Link)
Code Category	DRT - SPT
Official Website:	https://www.westsussex.gov.uk/
Led by:	West Sussex County Council
Start date:	2005
End date:	ongoing
Budget:	-
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Billingshurst
Description:	Single scheme shared taxi service on two specified routes around small town Shared operated by Jake's Cars a local taxi company provide the service, using helpful and friendly licensed drivers with modern comfortable vehicles, offer in Billingshurst, serving the villages. All journeys must be booked in advance.
Main Goal:	Provide a link to other local villages and communities, allowing access to shops, doctor, leisure facilities, clubs, evenings out and other public transport services.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Community Transport service & Link Schemes
Code Category	DRT - SPT
Official Website:	https://www.westsussex.gov.uk/
Led by:	West Sussex County Council, ACRE Project
Start date:	2005
End date:	ongoing
Budget:	-
Fare:	
Range Fare:	

Contacts:	-
Pilot sites:	Wiltshire e Swindon (UK)
Description:	There are 21 Community Minibus groups and 45 Link Schemes in Wiltshire and Swindon
Main Goal:	Support rural communities across Wiltshire and Swindon through advisory services for Village, offering a range of services that include Scheduled Public Transport services (paid for by the local authority) and day trip services.
Key Technologies:	-
Motivations:	-
Relevant Outcomes:	-

Project Name:	Connect2Wiltshire
Code Category	DRT - SPT
Official Website:	https://www.connectingwiltshire.co.uk/getting-around/community-transport/
Led by:	Wiltshire Council
Start date:	
End date:	
Budget:	-
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Wiltshire e Swindon (UK)
Description:	Community transport schemes run by voluntary groups in many parts of Wiltshire
Main Goal:	Coonect2Wiltshire provide transport for those who are enable to use public transport. It offers also cmmunity minibuses,dial-a-ride,link schemes services. It improve young people to get to work using WheelstoWork mopen loan scheme
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	NS Zonetaxi

Code Category	DRT
Official Website:	https://www.ns.nl
Led by:	Wiltshire Council
Start date:	2014
End date:	ongoing
Budget:	-
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Netherlands
Description:	National scheme, door-to-door journey taxi on demand
Main Goal:	It provides links for train stations
Key Technologies:	App, web site
Relevant Outcomes:	-

Project Name:	Plustur
Code Category	DRT
Official Website:	https://www.nordjyllandstrafikselskab.dk/Flextrafik/Plustur
Led by:	Transport Authority of Northern Denmark, Northern Jutland municipalities, the North Denmark Region,
Start date:	2018
End date:	ongoing
Budget:	
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Northern Jutland
Description:	Plustur is only available in designated rural areas, as a way to keep cheap the fare of transport for users. It is a part of regional transport authorty's strategy to improve accessibility in the rural parts of the region.
Main Goal:	It aims to make it easier for users/residents to plan

	their journeys and also making more options available – both public and private. Plustur wants to reduce the last mile link from their homes to the nearest main bust stops or train station. More over, to augment the existing demand-responsive transport services in North Jutland, Denmark.
Key Technologies:	App
Relevant Outcomes:	-

Project Name:	Citizen Bus Association 
Code Category	DRT
Official Website:	https://www.mambaproject.eu/existing-mobility-services/
Led by:	Bürgerbusverein Schüttorf-Wettringen
Start date:	2006
End date:	ongoing
Budget:	
Fare:	
Range Fare:	1.5-4.5€
Contacts:	-
Pilot sites:	Schüttorf, Ohne, Samern e Wettringen
Description:	The service run every work day, you can book it by phone and the fare is set by zone.
Main Goal:	Minibus on demand offering mobility to elderly and youth,led by volunteers.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Vippari 

Code Category	DRT
Official Website:	https://www.jakobstad.fi
Led by:	Local Public Transport
Start date:	1999
End date:	ongoing
Budget:	Town of Jakobstad and by the Centre for Economic Development, Transport and Environment
Fare:	
Range Fare:	2- 4 €
Contacts:	-
Pilot sites:	Jakobstad
Description:	Public Bus on demand. Vippari minibus is operating every workly day, pick users up at their entered address. Booking is avaiable by call.
Main Goal:	Minibus on demand offering mobility to elderly and youth,led by volunteers.
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	The Village Bus 
Code Category	DRT
Official Website:	https://www.euromontana.org/wp-content/uploads/2014/07/2.4-village-bus-in-kolsillre.pdf
Led by:	Local Public Transport
Start date:	1999
End date:	ongoing
Budget:	Town of Jakobstad and by the Centre for Economic Development, Transport and Environment
Fare:	
Range Fare:	2- 4 €
Contacts:	-
Pilot sites:	Kolsillre (Sweden)
Description:	Village bus is a minivan bus scheme, registration is made by phone or on website. It
Main Goal:	Village Bus respond to a demand responsive public

	transport service to give passengers the opportunity to manage their journey
Key Technologies:	-
Relevant Outcomes:	-

Project Name:	Bürgerrufauto
Code Category	DRT
Official Website:	https://www.buergerbus-bw.de/angebotsformen/der-pkw-buergerfahrdienst/
Led by:	Buergerbus
Start date:	2004
End date:	ongoing
Budget:	
Fare:	
Range Fare:	
Contacts:	
Pilot sites:	Baden-Württemberg
Description:	Volunteer-based public and community transport in Germany
Main Goal:	Helping people in village to travel rely on volunteering
Key Technologies:	
Relevant Outcomes:	The service has been successfull in Germany. Currently, it has been involved in many projects as free shuttle service for citizens, self-driving shuttle as support for Burgerbus, extension in countrysides, involving processes for idea contests, participation at Komobil2035

Project Name:	Tibus
Code Category	DRT
Official Website:	http://www.tibus.fr
Led by:	Tibus

Start date:	2005
End date:	ongoing
Budget:	
Fare:	2€
Range Fare:	
Contacts:	
Pilot sites:	Côtes d'Armor
Description:	interurban transport network for the people of Côtes d'Armor. This transport on demand run with an advance booking by phone
Main Goal:	The Conseil Général of Côtes d'Armor has applied Tibus over the years, to reinforcing the network which covers most of the territory.
Key Technologies:	
Relevant Outcomes:	The service has been successfull in Germany. Currently, it has been involved in many projects as free shuttle service for citizens, self-driving shuttle as support for Burgerbus, extension in countrysides, involving processes for idea contests, participation at Komobil2035

Project Name:	Public Transportation in Fjardabyggd
Code Category	DRT
Official Website:	https://en.visitfjardabyggd.is/travel-info/transport/public-transport
Led by:	East Iceland Public Bus Service
Start date:	2012
End date:	ongoing
Budget:	
Fare:	Ticket prices are based on fare zones, with each fare zone covering 15 km and the standard fares being calculated according to the number of fare zones in a trip.
Range Fare:	
Contacts:	
Pilot sites:	Fjardabyggd (Iceland)
Description:	Improved transport system in Fjardabyggd by

	enabling the use of School buses and sport buses, having ICT Transportation Information and Trip Planner options (as web pages) compiling information about public transportation for all available trips in Fjardabyggd, including car sharing and car pooling software and application. Moreover, it is designed and manufactured by people from the area.
Main Goal:	The Conseil Général of Côtes d'Armor has applied Tibus over the years, to reinforcing the network which covers most of the territory.
Key Technologies:	
Relevant Outcomes:	The service has been successfull in Germany. Currently, it has been involved in many projects as free shuttle service for citizens, self-driving shuttle as support for Burgerbus, extension in countrysides, involving processes for idea contests, participation at Komobil2035

Project Name:	Koli Shuttle Taxi
Code Category	DRT
Official Website:	https://en.visitfjardabyggd.is/travel-info/transport/public-transport
Led by:	East Iceland Public Bus Service
Start date:	2012
End date:	ongoing
Budget:	
Fare:	Fares depend on distance
Range Fare:	
Contacts:	
Pilot sites:	Fjardabyggd (Iceland)
Description:	The Koli shuttle operates daily between Joensuu and Koli, door-to-door. Taxi stops anywhere in Koli area, by the market square in Joensuu and at central hospital, railway station or airport in Joensuu when needed. Timetables are estimated pick-up times. It must be reserved 24 hrs in advance.
Main Goal:	Shuttle taxi service connecting Joensuu to Koli Koli through a wider private-public partnership.
Key Technologies:	
Motivations:	-

Relevant Outcomes:	Moving in Finald is possible with others accessibile transportation service as Shuttle taxi offering wheelchair transport, taxi services

Project Name:	CallConnect Bus (Lincolnshire InterConnect)
Code Category	DRT
Official Website:	https://lincsbus.info/
Led by:	Lincolnshire County Council
Start date:	2001
End date:	ongoing
Budget:	RBSG and Rural Bus Challenge funding CallConnect Bus
Fare:	
Range Fare:	
Contacts:	
Pilot sites:	Lincolnshire
Description:	CallConnect buses operate throughout rural areas of Lincolnshire, North Lincolnshire, Rutland, Peterborough and East Northants. Journeys are available booking in advance.
Main Goal:	Call Connect are Demand responsive services introduced to cover the villages and to provide interchange with service six at Horncastle and Spilsby. Currently the service is designed to improve transport opportunities in rural communities and market towns where conventional bus services are limited or infrequent. Serving small hamlets, remote villages, rural communities and market towns
Key Technologies:	
Motivations:	-
Relevant Outcomes:	

SCOOTER TAXI

Project Name:	Hopper 

Code Category	E-ST
Official Website:	http://www.myhopper.nl/?lang=en
Led by:	Hopper – Municipality
Start date:	2012
End date:	2013
Budget:	Private and public funding
Fare:	2.5 € per ride
Range Fare:	
Contacts:	
Pilot sites:	Amsterdam (Netherlands)
Description:	Green electric scooters that are used for an innovative, silent and low environmental impact taxi service. Booking is made by phone or by app
Main Goal:	Offering an ecological and fast way of travel
Key Technologies:	App
Motivations:	-
Relevant Outcomes:	Hopper was the first electric scooter run on the road offering fast journey in Europe and in Holland. It has been successful for workers and youngers. Moreover, Hopper was cheaper than taxi rides, public transport and green.

Project Name:	Vesping 
Code Category	ST
Official Website:	http://www.myhopper.nl/?lang=en
Led by:	Vesping
Start date:	2005
End date:	ongoing
Budget:	-
Fare:	You will show fare by app. Prices depends on distance.
Range Fare:	
Contacts:	
Pilot sites:	Barcelona (Spain)

Description:	Vesping service is rental scooter allowing to travel aroung the city.
Main Goal:	Riding scooter offer quick and easy way to move in a big city, less time waiting and avoiding time spent to park.
Key Technologies:	App
Motivations:	-
Relevant Outcomes:	Vesping was the pioneers in the fiels of rental scooters in the city major used by youngers.

SCOOTER RIDESHARING (POOLING)

Project Name:	Scooterino
Code Category	SR-SP
Official Website:	http://scooterino.it/
Led by:	Scooterino
Start date:	2015
End date:	ongoing
Budget:	-
Fare:	You will show fare by app. Prices depends on distance.
Range Fare:	
Contacts:	
Pilot sites:	Genoa, Rome,Florence
Description:	Innovative startup. The driver is able to drive gratis self-paying the fuel and scooter repair, passengers contribute to travel expenses.
Main Goal:	Scooterino aim to change passengers behaviour, helping them to move in city in different and better way: cheaper,fast and affordable. Morover, it redue CO2 emissions.
Key Technologies:	App
Motivations:	-
Relevant Outcomes:	Scooterino make ahed steps including more cities, less time waiting to book and it has been involved in “Laudato Sì Challenge 2017“

Project Name:	Wheels2Work
Code Category	SR-SP
Official Website:	https://www.shropshire-rcc.org.uk/services/individuals/wheels-to-work, https://wheels2worklincs.co.uk/
Led by:	Shropshire County council - ACRE Project
Start date:	1997
End date:	ongoing
Budget:	Shropshire Community Fund and Lincolnshire
Fare:	
Range Fare:	
Contacts:	wheels2work@shropshire-rcc.org.uk
Pilot sites:	Shropshire UL, Lincolnshire (UK)
Description:	Scooter sharing for youngers and people to get to work or study.
Main Goal:	W2W is a successfull service in many England country sides supporting people in rural areas overcoming the lack of of public transport.The first objective in 1999 was to offer and help to find affordable and flexible transport to work, particularly for youngers entering the labour market for the first time.
Key Technologies:	-
Motivations:	-
Relevant Outcomes:	This format has been proposed in many contry villages led by Local County Council. In Shropshire are active fundings campain helpng expand W2W services.

CAR-SHARING

Project Name:	Carshare Devon
Code Category	CS

Official Website:	https://liftshare.com/uk/community/devon
Led by:	Devon Travel Scheme – Liftshare - Devon County Council
Start date:	2014
End date:	ongoing
Budget:	
Fare:	Prices may vary
Range Fare:	
Contacts:	
Pilot sites:	Devon
Description:	Sharing car join the travel and driver,after request you can share rides.
Main Goal:	Devon carsharing aim to save money by sharing travel costs, reduce the stress of driving by sharing, cut the congestion and pollution
Key Technologies:	Liftshare App
Relevant Outcomes:	Collaboration with AppMway

Project Name:	Carshare Belgium
Code Category	CS
Official Website:	https://www.autodelen.net/
Led by:	Autodelen
Start date:	2014
End date:	ongoing
Budget:	
Fare:	Price by km
Range Fare:	
Contacts:	
Pilot sites:	Belgium
Description:	Carsharing suported by Interrg North Sea Region Program, Vlaanderen compayn and AutoDelen.net. Use cars shared by suppliers or by people sharing their own cars. There are two possibility: pick up and return at the same location or in free floating.
Main Goal:	Save money and time. Morevoer, carsharing is a solutions to avoid a second own car.
Key Technologies:	App, website

Relevant Outcomes:	

Project Name:	Mobility
Code Category	CS
Official Website:	https://www.mobility.ch/en/
Led by:	Mobility
Start date:	2007
End date:	ongoing
Budget:	
Fare:	Price by km and by plans.
Range Fare:	
Contacts:	
Pilot sites:	Switzerland
Description:	Mobility is car sharing with pick up and return at Mobility station. This service is one of carsharing that offer 24h service center help.
Main Goal:	Smart way for you to stay on the move: unlike with private cars, you only incur costs when you're actually driving.
Key Technologies:	App, website
Relevant Outcomes:	Mobility network is facing with electric and hybrid vehicles. Collaboration with *myclimate - The Climate Protection Partnership*

Project Name:	car2go
Code Category	CS
Official Website:	https://www.car2go.com/AT/en/
Led by:	Car2go
Start date:	2007
End date:	ongoing
Budget:	
Fare:	Price by km and by plans.

Range Fare:	
Contacts:	
Pilot sites:	21 cities in Europe,America,Canada
Description:	car2go is the world's first free-floating carsharing service.
Main Goal:	gives you all the benefits of a car without owning one – parking, fueling, and insurance2 included.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Taxistop
Code Category	CS
Official Website:	https://www.taxistop.be
Led by:	Taxistop - MOSES PROJECT
Start date:	1975
End date:	ongoing
Budget:	
Fare:	Price by km and by plans and services
Range Fare:	
Contacts:	
Pilot sites:	Belgium
Description:	Taxistop include many services allowing people to move.
Main Goal:	respond to peoples needs and offer them alternative solutions to save time and money.
Key Technologies:	App, website
Relevant Outcomes:	Taxistop is still developing new projects and expanding its network by being part of the movement of the sharing economy

Project Name:	Airportstop
Code Category	CS

Official Website:	https://www.taxistop.be
Led by:	Taxistop
Start date:	1999
End date:	ongoing
Budget:	
Fare:	Price by km and by plans and services
Range Fare:	
Contacts:	
Pilot sites:	Belgium
Description:	Airstop in one of many service launched by Taxistop. Airportstop is carpooling to the airport of Zaventem.
Main Goal:	respond to peoples needs and offer them alternative solutions to save time and money.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Eventpool 
Code Category	CS
Official Website:	https://www.taxistop.be
Led by:	Taxistop
Start date:	2000
End date:	ongoing
Budget:	€ 200.000
Fare:	10 €
Range Fare:	
Contacts:	-
Pilot sites:	
Description:	Share ride for event (private or public), planning in advance
Main Goal:	Eventpool wants to reduce the car-flow to the event and be complementary to public transport and bike.
Key Technologies:	App, website,
Relevant Outcomes:	-

Project Name:	Cambio
Code Category	CS
Official Website:	https://www.taxistop.be
Led by:	Taxistop - Cambio Mobilitätsservice gmbh (Duitsland)
Start date:	2002
End date:	ongoing
Budget:	€ 200.000
Fare:	10 €
Range Fare:	
Contacts:	-
Pilot sites:	Belgium
Description:	Optimobil develops carsharing in Belgium under the commercial name 'cambio'.
Main Goal:	Offers a shared car service. Shared cars are available to our users in different cities across the country
Key Technologies:	App, website
Relevant Outcomes:	-

Project Name:	Cambio Wallonia
Code Category	CS
Official Website:	https://www.taxistop.be
Led by:	Taxistop - Cambio Mobilitätsservice gmbh (Duitsland)
Start date:	2002
End date:	ongoing
Budget:	
Fare:	3€/month (medium). Prices vary on plans
Range Fare:	
Contacts:	-
Pilot sites:	Wallonia
Description:	In Wallonia, the more than 1950 users have 95 cars

	divided between more than 50 stations in 11 Walloon cities. Cambio owes its success, among other things, to the close cooperation with the VAB Automobile Club and the public transport companies De Lijn, STIB and TEC .
Main Goal:	Offers a shared car service. Shared cars are available to our users in different cities across the country. Cambio promote home-work route for business companies.
Key Technologies:	App, website,
Relevant Outcomes:	SNCB-Holding joined the project at the end of 2009, thus finalizing the collaboration with the public transport companies

Project Name:	Autopia
Code Category	CS
Official Website:	https://www.taxistop.be
Led by:	Taxistop - Cambio Mobilitätsservice gmbh (Duitsland)
Start date:	2012
End date:	ongoing
Budget:	38.500 € (Bruxelles Government)
Fare:	10 € annual fee + €/km
Range Fare:	
Contacts:	-
Pilot sites:	Belgium
Description:	People offering own car for carsharing when the car is not used.
Main Goal:	Offering opportunity to travel without owing a car
Key Technologies:	
Relevant Outcomes:	Taxistop incorporates Autopia as service in the vzw in Wallonia to develop carsharing amongst private individuals.

Project Name:	Green Mobility 

Code Category	CS
Official Website:	https://greenmobility.com/dk
Led by:	Grennmobility
Start date:	2016
End date:	ongoing
Budget:	
Fare:	First 30‘ free, over 30‘ the prices is 0,15 €cent/min
Range Fare:	
Contacts:	-
Pilot sites:	Copenhagen, Frederiksberg and Gentofte municipality.
Description:	Electric Carsharing in city and peripheral area
Main Goal:	Green mobility offers a pay-as-you-go car rental service
Key Technologies:	App, e-charging points
Relevant Outcomes:	GreenMobility has been launched in Dublin and Vien

Project Name:	Drive Now
Code Category	CS
Official Website:	https://specialmente.bmw.it/tag/drivenow/
Led by:	Bmw
Start date:	2011
End date:	ongoing
Budget:	Private Funding
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	13 European Cities
Description:	Electric Carsharing in city
Main Goal:	DriveNow reduces traffic and improves the parking situation in urban areas, but is also supporting the breakthrough of electromobility snd eeks to improve the quality of life in urban areas through

	its mobility offer.
Key Technologies:	App, E-charging points
Relevant Outcomes:	Expansion of the offer in the areas of on-demand mobility (DriveNow and ReachNow), parking (ParkNow) and charging (ChargeNow) in a sustainable manner.

Project Name:	Car Club
Code Category	CS
Official Website:	http://www.citycarclub.net/en/car-sharings-benefits
Led by:	City car club
Start date:	1999
End date:	ongoing
Budget:	Private Funding
Fare:	Monthly fee + €/km
Range Fare:	
Contacts:	-
Pilot sites:	Helsinki
Description:	Carsharing enable to pickup and return car with full flexibility, there are free parking in very central locations around the city. CCC is able in peripheral urban areas.
Main Goal:	Save money, giving opportunity to use other means of transport except public transport or taxi, using a carsharing for business, environment sustainability.
Key Technologies:	App, website
Relevant Outcomes:	City car club offer car sharing for companies,

Project Name:	Stadtmobil
Code Category	CS
Official Website:	https://www.stadtmobil.de/stadtmobil/ueber-

	stadtmobil/
Led by:	Stadtmobil
Start date:	1992
End date:	ongoing
Budget:	Private Funding
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Pforzheim, Mannheim, Heidelberg, Stuttgart, Hannover
Description:	The first service was born as voluntary scheme, then it has been evolved in business led by private company.
Main Goal:	Save money, giving opportunity to use other means of transport except public transport or taxi, using a carsharing for business, environment sustainability.
Key Technologies:	App, website
Relevant Outcomes:	To promote rural transport Carsharing links with communities or little local communities to promote rural services.

Project Name:	Bundesverband Carsharing
Code Category	CS
Official Website:	https://www.carsharing.de/
Led by:	Carsharing
Start date:	1998
End date:	ongoing
Budget:	Private Funding
Fare:	Monthly fee + €/km
Range Fare:	
Contacts:	-
Pilot sites:	LK Ebersberg (Germany)
Description:	Carsharing for people and companies. It runs in rural areas since 2012
Main Goal:	reduce the car use and car traffic and to reduce the environmental impact of private motorised transport. The bcs promotes CarSharing as a

	modern mobility service and is committed to networking with public transport.
Key Technologies:	App, website
Relevant Outcomes:	Today, the stadtmobil group operates in many cities in Germany and works with almost all CarSharing providers organised by the CarSharing Association. Today, the stadtmobil group operates a fleet of around 2,800 vehicles.

Project Name:	Ford Carsharing
Code Category	CS
Official Website:	https://anmeldung.flinkster.de/
Led by:	Flinkste, Ford
Start date:	2015
End date:	ongoing
Budget:	Private Funding
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	LK Ebersberg (Germany)
Description:	Fkinster has promoted 24 collaborations with partners in Germany, Austria and Trentino offering electric carsharing services. Ford has a fleet of cars, while Flinkster manages the service.
Main Goal:	It offers mobility services outside metropolitan areas, in small and medium sized cities.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Communauto
Code Category	CS
Official Website:	https://www.communauto.paris/
Led by:	Communauto
Start date:	1994
End date:	ongoing

Budget:	Private Funding
Fare:	1,75 €/h e 0,28 €/km Fee 29,95 €/day e 0,22 €/km
Range Fare:	Different models of subscriptions and packages, for regural,occasional or intensive use
Contacts:	-
Pilot sites:	Quebeb, New Scotland and Ontario.
Description:	Communauto has been pioneer in sharing in 1994 involving Quebec City, Montreal, Sherbrooke and Gatineau.
Main Goal:	Communauto offers two types of services to maximize the efficiency of the service and its scope. Reserved car sharing meets planned mobility needs and the service, without reservation, responds to more planned trips.
Key Technologies:	App, website
Relevant Outcomes:	The integration of energy-efficient vehicles with an optimal mix of 100% electric and hybrid cars is at the heart of the company's strategy.

Project Name:	Boleia
Code Category	CS
Official Website:	https://www.boleia.net
Led by:	Boleia
Start date:	2012
End date:	ongoing
Budget:	Private Funding
Fare:	
Range Fare:	
Contacts:	
Pilot sites:	Portugal
Description:	Boleia è un servizio di carsharing promosso da una startup
Main Goal:	Boleia offre diversi servizi di carsharing, dall'uso quotidiano all'uso per cocnerti,eventi,festival etc. l'obiettivo della nascita della startup è di fornire un mezzo alternativo agli utenti
Key Technologies:	App, website

Relevant Outcomes:	

E-CARSHARING

Project Name:	Sharen'go 
Code Category	e-CS
Official Website:	https://site.sharengo.it
Led by:	Sharen'go
Start date:	2016
End date:	ongoing
Budget:	Private Funding
Fare:	
Range Fare:	
Contacts:	
Pilot sites:	Milan, Florence, Rome, Modena (Italy)
Description:	Electic car sharing with app booking, pick up and return in defined area. It works in restricted urban zones in city center.
Main Goal:	carsharing promote benefits to save environment, save money, time spent to find parking, reduce traffic jams.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	E-vai
Code Category	e-CS
Official Website:	https://www.e-vai.com/
Led by:	Sharen'go
Start date:	2016
End date:	ongoing
Budget:	Private Funding

Fare:	Fares depend on type of services.
Range Fare:	
Contacts:	
Pilot sites:	Milan, Florence, Rome, Modena (Italy)
Description:	E-Vai is regional electric car sharing in Lombardy. The practical and economical solution to move freely in respect of the environment thanks to 100% electric cars or low environmental impact.
Main Goal:	E-car sharing offers a shared mobility system that allows the elimination of all the costs of a private car, also reducing traffic and CO2 emissions.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	e-Golf Greenwheels 
Code Category	e-CS
Official Website:	https://www.greenwheels.com/nl/prive/e-golf
Led by:	Greenwheels - NS
Start date:	2009
End date:	ongoing
Budget:	Private Funding
Fare:	Fares depend on type of subscriptions
Range Fare:	
Contacts:	
Pilot sites:	Driebergen-Zeist station and Rotterdam Central Station.
Description:	NS (Dutch Railways) and Greenwheels launch together the first two e-Golf Volkswagen.
Main Goal:	GW offers multimodality transport implementing urban areas and stations with e-cars points.
Key Technologies:	App, website

Relevant Outcomes:	Green Deal Car Sharing 2.0 is to stimulate car sharing in the Netherlands.

Project Name:	Flinkster e-car sharing 
Code Category	e-CS
Official Website:	https://www.deutschebahnconnect.com/
Led by:	Flinkster - DB
Start date:	2001
End date:	ongoing
Budget:	Private Funding
Fare:	1.5€/h or 39.9 €/day
Range Fare:	
Contacts:	
Pilot sites:	Driebergen-Zeist station and Rotterdam Central Station.
Description:	Flinkster is launched by DB (Deutsche Bahn) and curently ist he biggest carsharing newtork in all Germany.
Main Goal:	Carsharing for business, for private and public use. Moreover offers mobiity in country sides and rural areas in flexbile way.
Key Technologies:	App, website
Relevant Outcomes:	Green Deal Car Sharing 2.0 is to stimulate car sharing in the Netherlands.

Project Name:	Bundesverband Carsharing bcs CarSharing
Code Category	E-CS
Official Website:	https://www.carsharing.de/
Led by:	Carsharing

Start date:	1998
End date:	ongoing
Budget:	Private Funding
Fare:	Monthly fee + €/km
Range Fare:	
Contacts:	-
Pilot sites:	LK Ebersberg (Germany)
Description:	E-Carsharing for people and companies. It runs in rural areas since 2012
Main Goal:	reduce the car use and car traffic and to reduce the environmental impact of private motorised transport. The bcs promotes CarSharing as a modern mobility service and is committed to networking with public transport.
Key Technologies:	App, website
Relevant Outcomes:	Today, the stadtmobil group operates in many cities in Germany and works with almost all CarSharing providers organised by the CarSharing Association. Today, the stadtmobil group operates a fleet of around 2,800 vehicles.

ELECTRIC LIGHT MOBILITY

Project Name:	CIRC – Italy 
Code Category	E-LM
Official Website:	https://emob-italia.it/e_mob-2019/gli-espositori/circ/
Led by:	CIRC
Start date:	
End date:	ongoing
Budget:	55 Ml €
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Milan
Description:	E-micromobility leader runs in 13 Nations

Main Goal:	Promote micro-mobility as new means of transport: innovative, smart and ecological. Overcoming last and first mile.
Key Technologies:	App, website
Relevant Outcomes:	Circ a micro-mobility member of the Union Internationale des Transports Publics (UITP)

Project Name:	CIRC – Switerzland 
Code Category	E-LM
Official Website:	https://emob-italia.it/e_mob-2019/gli-espositori/circ/
Led by:	CIRC
Start date:	2019
End date:	ongoing
Budget:	55 Ml €
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	Switzerland
Description:	In Switzerland Circ signed the first global partnership between a public transport operator and an e-scooter company, starting to collaborate with the main national operator of public transport the Swiss Federal Railways (Schweizerische Bundesbahnen, SBB).
Main Goal:	Circ aims at creating mobility options for rail and e-scooter users and promote interoperability
Key Technologies:	App, website
Relevant Outcomes:	Circ a micro-mobility member of the Union Internationale des Transports Publics (UITP)

Project Name:	HELBIZGO 
Code Category	E-LM
Official Website:	https://helbiz.com/
Led by:	HELBIZ

Start date:	2019
End date:	ongoing
Budget:	
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	
Description:	E-micromobility leader runs in 8 cities
Main Goal:	Helbiz provides powerful micromobility solutions for urban areas
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Avis Electric Motion
Code Category	E-LM
Official Website:	https://www.avisautonoleggio.it
Led by:	E-GAP/Avis Italia
Start date:	2019
End date:	ongoing
Budget:	
Fare:	€/h
Range Fare:	Weekend,weekly,monthly subscriptions
Contacts:	-
Pilot sites:	Rome, Milan
Description:	E-chargin for electri vehicles. It sets in 8 italian cities, at airports and stations. E-cars allow you to drive in Limited traffic zones.
Main Goal:	E-GAP & AVIS offered a bonus to charge for users who rent e-cars.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Mimoto 
Code Category	E-LM
Official Website:	https://mimoto.it/
Led by:	MIMOTO - IREN
Start date:	2019
End date:	ongoing
Budget:	
Fare:	€/h
Range Fare:	Weekend,weekly,monthly subscriptions
Contacts:	-
Pilot sites:	Genoa
Description:	E-scooter sharing with free floating. IT has been successful in Turin and Milan, which is mostly used by youngers.
Main Goal:	E-scooter sharing offers quick and cheap journey.
Key Technologies:	App, website
Relevant Outcomes:	

AGILE BIKE SHARING

Project Name:	Uber bike 
Code Category	ABS
Official Website:	https://www.uber.com/it/it/ride/uber-bike/
Led by:	UBER
Start date:	2018
End date:	ongoing
Budget:	
Fare:	€/h
Range Fare:	Weekend,weekly,monthly subscriptions
Contacts:	-

Pilot sites:	San Francisco
Description:	JUMP bicycles are pedal-assisted electric bikes: the more you pedal, the faster you go.
Main Goal:	On-demand electric bikes that allow you to reach farther destinations in a faster and more enjoyable way.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	E-bike management system for e-mobility
Code Category	ABS
Official Website:	http://www.sitael.com
Led by:	SITAEL - MAT
Start date:	2018
End date:	ongoing
Budget:	
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	
Description:	ESB.BikeSharing is the e-bike sharing management system characterized by a connectivity platform (based on cloud) for vehicle sharing environments. By authorising vehicles with diagnostic and GPS tracking tools, several additional features are provided compared to a typical vehicle sharing system.
Main Goal:	Possibility of real-time remote diagnostics, component life time forecasts, direct customer service and a new social experience.
Key Technologies:	App, website, IOT
Relevant Outcomes:	Won the Honoree Award at the CES 2018 Innovation Awards in the Vehicle Intelligence and Self-Driving Technology category.

Project Name:	Flinkster bike-sharing

	
Code Category	ABS
Official Website:	https://www.callabike-interaktiv.de
Led by:	Flinkster - Call a Bike (DB)
Start date:	2018
End date:	ongoing
Budget:	
Fare:	
Range Fare:	
Contacts:	-
Pilot sites:	
Description:	Flinkster, Deutsche Bahn's carsharing service, and Call a Bike are in partnership for Flinker Bike-Sharing
Main Goal:	Promote bike transport and connect Flinkster sharing point with bike supporting multimodal means of transport.
Key Technologies:	App, website,
Relevant Outcomes:	

Project Name:	Ecovolis
Code Category	ABS
Official Website:	http://www.ecovolis.a
Led by:	Ecovols - Tirana Municipality
Start date:	2018
End date:	ongoing
Budget:	
Fare:	Membership subscription or a personal identification document (such as passport or ID card). For visitors $1.00 per day
Range Fare:	

Contacts:	-
Pilot sites:	Tirana
Description:	Flinkster, Deutsche Bahn's carsharing service, and Call a Bike are in partnership for Flinker Bike-Sharing
Main Goal:	Promote bike transport and connect Flinkster sharing point with bike supporting multimodal means of transport.
Key Technologies:	App, website,
Relevant Outcomes:	

I-CYCLE PATHS

Project Name:	Bicycle superhighways 
Code Category	I-CP
Official Website:	https://bicycledutch.wordpress.com/2012/08/23/spectacular-new-floating-cycle-roundabout/
Led by:	Denmark Government
Start date:	2012
End date:	ongoing
Budget:	6.3 Ml €
Fare:	-
Range Fare:	-
Contacts:	-
Pilot sites:	Denmark
Description:	this roundabout the “world’s first floating cycle roundabout. The Cycle path allow connection in rural and urban area. In all Netherlands there are cycle paths, one of these is the Floating roundabout.
Main Goal:	allows people riding bicycles to cross over a highway. the bridge provide safe passage.
Key Technologies:	
Relevant Outcomes:	

Project Name:	The Hovenring 
Code Category	I-CP
Official Website:	http://www.copenhagenize.com/2017/06/bicycle-superhighways-in-copenhagen.html
Led by:	Eindhoven Government
Start date:	2017
End date:	ongoing
Budget:	$1.6 million
Fare:	-
Range Fare:	-
Contacts:	-
Pilot sites:	Eindhoven
Description:	The Bicycle Superhighway Network in Copenhagen Capital Region completed in 2017 has 115 km of route
Main Goal:	Bicycle paths that are designed for commuters traveling much longer distances to and from the capital of Copenhagen -- up to 14 miles. While the region is great for intermodality, connecting bikes with trains, the plans for the Bicycle Super Highway network target increasing the latter number through constructing 28 routes that connect and pass through 23 municipalities
Key Technologies:	
Relevant Outcomes:	

Project Name:	Solar Cycle lane 
Code Category	I-CP
Official Website:	https://www.renewableenergyworld.com/2014/11/14/netherlands-installs-worlds-first-solar-bike-path/#gref
Led by:	Dutch Government
Start date:	2017
End date:	ongoing
Budget:	3 Ml€

Fare:	-
Range Fare:	-
Contacts:	-
Pilot sites:	Krommenie and Wormerveer
Description:	The 70-metre-long cycling path between Krommenie and Wormerveer in the Netherlands. Instead of asphalt, the path is made of solar panels which, in the final version, will supply three homes with electricity. In 2016 the path will be extended to 100 mt in lenght.
Main Goal:	The aim is to install solar panels on 20% of all roads in the country, enough to supply the entire infrastructure, from traffic lights to electric vehicles to electric bikes, with power.
Key Technologies:	
Relevant Outcomes:	

Project Name:	Sun-powered bicycle path 
Code Category	I-CP
Official Website:	http://www.copenhagenize.com/2017/06/bicycle-superhighways-in-copenhagen.html
Led by:	TPA Instytut Badan Technicznych – Strabag
Start date:	2016
End date:	ongoing
Budget:	$31,000
Fare:	-
Range Fare:	-
Contacts:	-
Pilot sites:	Lidzbark Warmiński Poland
Description:	The surface of the bike path contains a synthetic material called phosphor that can emit fluorescent light for 10 hours in the dark after absorbing sunlight all day long. Granted the path is only 100m long at the moment
Main Goal:	The aim is to bike more environmentally friendly. A local company has built a prototype bicycle path that absorbs sunrays by day so that it can light up at night, thereby illuminating the way for people on their bicycles.
Key Technologies:	

Relevant Outcomes:	

I-VEHICLE

Project Name:	MobiPunt 
Code Category	I-V- MMHP
Official Website:	https://www.mobipunt.be/
Led by:	Share North (Interreg Program) & Private Partner
Start date:	2017
End date:	2019 (end of funding)
Budget:	€ 23.000
Fare	-
Range Fare	-
Contacts:	-
Pilot sites:	
Description:	Physical place that brings a variety of mobility and other functions together
Main Goal:	Promote a multi modality on a small scale. Transport hub on neighbourhood level, where different sustainable and shared transport modes are linked with each other
Key Technologies:	Facilities for car, parking, ICT
Relevant Outcomes:	-

Project Name:	ELVITEN H2020
Code Category	I-VI
Official Website:	https://www.elviten-project.eu/en/
Led by:	Horizon H2020

Start date:	2017
End date:	2020
Budget:	€ 9.5 Ml
Fare	-
Range Fare	-
Contacts:	-
Pilot sites:	Rome Genoa,Bari,Malaga,Trikala,Berlin
Description:	Electrical Light Vehicles integrated into transport
Main Goal:	Promote EL-VS in urban areas highlighting the usefulness of this electric vehicles for urban mobility.
Key Technologies:	App, website
Relevant Outcomes:	-

SELF DRIVING SHUTTLE

Project Name:	Ultra London 
Code Category	SDS
Official Website:	www.ultraglobalprt.com
Led by:	Ultra Global Prt
Start date:	2013
End date:	ongoing
Budget:	$7 – 15 Ml/km
Fare	2.89 $
Range Fare	-
Contacts:	-
Pilot sites:	London – Heathrow airport
Description:	These are rapid transit systems electric-powered with an on-board guide system
Main Goal:	Supporting solution for localised areas with high-frequency transport needs. ULTra offers personal transport with no waiting, taking passengers non-stop to their chosen destination.
Key Technologies:	App, website, AI

Relevant Outcomes:	In May 2013 celebrated 1 Ml passengers driven

Project Name:	Olli 
Code Category	SDS
Official Website:	https://localmotors.com/
Led by:	Local Motors
Start date:	2015
End date:	ongoing
Budget:	$1 Bl
Fare	-
Range Fare	-
Contacts:	-
Pilot sites:	National Harbor MD, Berlin, Los Angeles, Chicago, Las Vegas
Description:	neighborhood mobility solution and the world's first co-created, self-driving, electric and cognitive shuttle.
Main Goal:	manage and optimize the operations of a self-driving vehicle fleet while providing an end-to-end, seamless experience for your riders.
Key Technologies:	App, website, AI
Relevant Outcomes:	

Project Name:	Optimus Ride 
Code Category	SDS
Official Website:	https://localmotors.com/
Led by:	Local Motors
Start date:	2015
End date:	ongoing
Budget:	
Fare	-

Range Fare	-
Contacts:	-
Pilot sites:	Seaport District, Brooklyn Navy Hard, Union Point, Brookfield Halley Rise, Paradise Valley Estates
Description:	Self-driving vehicle systems. Optimus Ride Inc. is the leading self-driving vehicle technology
Main Goal:	autonomous transportation solutions for geofenced locations, from residential communities and mixed-use developments, to office/industrial parks, ports, airports, academic campuses and city zones.
Key Technologies:	App, website, AI
Relevant Outcomes:	

Project Name:	Autonomous shuttle in Bad Birnbach 
Code Category	SDS
Official Website:	https://ruralsharedmobility.eu
Led by:	Deutsche Bahn (DB, district of Rottal-Inn, small municipality of Bad Birnbach, French start-up company EasyMile and TÜV Süd
Start date:	2017
End date:	ongoing
Budget:	Public funding as well as support of the project partners.
Fare	free
Range Fare	-
Contacts:	-
Pilot sites:	Landshut, one of 18 regions of Bavaria federal State
Description:	The GP is implemented in Bad Birnbach, a small municipality with around 5700 inhabitants in the district of Rottal-Inn
Main Goal:	offer a safe, affordable and innovative transport service between the railway station, the thermal baths and the local market square.
Key Technologies:	App, website, AI

Relevant Outcomes:	

STRATEGY & MANAGEMENT

Project Name:	Rezo Pouce
Code Category	SM-CP
Official Website:	https://www.rezopouce.fr
Led by:	The association Covoiturons sur le Pouce
Start date:	2010
End date:	ongoing
Budget:	Public funding as well as support of the project partners.
Fare	-
Range Fare	-
Contacts:	-
Pilot sites:	Landshut, one of 18 regions of Bavaria federal State
Description:	Rezo Pouce, hitchhiking on a daily basis is an association and a cooperative society of collective interest (SCIC). To register is to integrate a serene network and a community of users always ready to join.
Main Goal:	It allows you to move in "whenever I want, wherever I want! ». No need to find a carpool in advance or to wonder if a trip is available at the time you are interested
Key Technologies:	App, website, blog
Relevant Outcomes:	

Project Name:	Smart move in the metropolitan area of alba iulia 

Code Category	SM-SC
Official Website:	https://ruralsharedmobility.eu/
Led by:	Intercommunity Development Association for Public Transport Alba Iulia
Start date:	2012
End date:	ongoing
Budget:	3.800.000 € from Local Council of Alba Iulia
Fare	Fare depends on zones
Range Fare	€ 1 - 7
Contacts:	-
Pilot sites:	Alba County, largest city in the county, adjacent rural communes
Description:	Moving forward with ict in public transportation and shared mobility
Main Goal:	Implemented as a free-standing project, with the main purpose of ensuring better rural - urban connection, through a public transport service with an integrated information service, ticketing scheme and transport timetable.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	O.R.A. Open Road Alliace
Code Category	SM-SC
Official Website:	http://www.progetto-ora.it/
Led by:	Unipolis Foundation, the Unipol Group's corporate foundation, and Acitve Citizen
Start date:	2019
End date:	2021
Budget:	-
Fare	-
Range Fare	-
Contacts:	-

Pilot sites:	14 Italian metropolitan cities: Bari, Bologna, Cagliari, Catania, Florence, Genoa, Messina, Milan, Naples, Palermo, Reggio Calabria, Rome, Turin and Venice.
Description:	A project on sustainable mobility for Italian schools promoted fully in line with the commitment of Unipolis and the entire Unipol Group for Sustainability, in line with the United Nations Agenda 2030. Mobility is one of the areas of intervention of both the Unipolis Foundation and the Unipol Strategic Plan, which projects us until 2021
Main Goal:	consists of a training course and a contest of ideas aimed at developing the new "Manifesto of Sustainable Mobility. promote a new culture of mobility through new models of sustainability and increase the involvement and active participation of citizens, in particular young people, considering school as the place to develop a broader reflection on these issues. O.R.A. intends to stimulate awareness of a new model that is more sustainable in the broad sense, based on attention to environmental issues, safety, sharing of means, an orientation towards multimodality and interoperability as well as a more sustainable approach to the world of local public services.
Key Technologies:	App, website
Relevant Outcomes:	

Project Name:	Muldental in Fahrt
Code Category	SM-ICS
Official Website:	https://www.mdv.de/informationen/projekte/modellvorhaben-muldental-in-fahrt/
Led by:	Mitteldeutscher Verkehrsverbund (transport operator) 9 partner
Start date:	2017
End date:	ongoing
Budget:	-
Fare	€ 2.5
Range Fare	-
Contacts:	-
Pilot sites:	Saxony (Germany)

Description:	Project at Rumobil, where the supply and the number of collegmanites for an entire region are increased. The model project "Muldental in Fahrt" was developed in order to achieve a paradigm shift in terms of accessibility, mobility, public services and thus the quality of life of all citizens outside the major cities of Saxony. In the Leipzig district, a room was selected in the city corridor of Bad Lausick, Brandis, Colditz and Grimma, where about 100,000 people live.
Main Goal:	With its innovative bus network, the Leipzig district plays a pioneering role throughout Saxony in terms of mobility in rural areas - from the thinning out of public transport to a truly attractive mobility offer for all inhabitants of Muldental.
Key Technologies:	App, website
Relevant Outcomes:	As the next stage of implementation, the introduction of city bus services for the municipalities of Bad Lausick and Brandis is scheduled for December 2019. In this way, refined development must take place within the main cities with the connection of the nearest local districts. All project partners are in intensive communication with the Free State of Saxony.

Project Name:	Rumobil
Code Category	SM-ICS
Official Website:	https://www.interreg-central.eu/Content.Node/RUMOBIL/RUMOBIL-Project-presentation-at-the-U-Lead-Kick-off-Confe.html
Led by:	Ministry for Regional Development and Transport of Saxony-Anhalt – Other different Ministers of Partners
Start date:	2016
End date:	2019
Budget:	€ 2.687.022,00
Fare	
Range Fare	-
Contacts:	-
Pilot sites:	Saxony-Anhalt (Germany)
Description:	The RUMOBIL project, financed under the INTERREG Central Europe programme, supported cooperation between public authorities and their transport companies to discuss how to respond to

	pressures on regional public transport systems caused by demographic changes in peripheral areas. The project involved 12 partners in 7 different countries in the central and eastern part of Europe, has allowed the implementation of interventions as bus stops and stations, the enhancement of apps and software to incentivise the use of sustainable transport by the population of rural areas.
Main Goal:	The main aims of the project were the development of rural and decentralised areas, by acting on enhancing sustainable mobility. Moreover, RUMOBIL provides a platform to exchange knowledge, to review transport policies to better meet changing mobility needs.
Key Technologies:	App, web platform
Motivations:	-
Relevant Outcomes:	

Project Name:	Shotl
Code Category	SM - SM
Official Website:	https://shotl.com/
Led by:	Shotl
Start date:	2017
End date:	ongoing
Budget:	-
Fare	€ 2.5
Range Fare	-
Contacts:	-
Pilot sites:	Saxony (Germany)
Description:	Bus platform on request, which is however "sold" to a city or an operator to manage its service. Shotl helps transport operators and cities make better use of their bus systems by replacing low-floor routes with on-demand shuttles.
Main Goal:	Shotl operates for villages, district and vulnerables people. Shotl provides technology and resources to help cities test and implement new transport services that meet demand.

Key Technologies:	App, website
Relevant Outcomes:	We are currently working with municipalities and transport companies, as well as mobility planners and consultants.

Project Name:	GMV DRT
Code Category	SM - SM
Official Website:	https://www.gmv.com
Led by:	GMV
Start date:	2017
2019	2019
Budget:	-
Fare	
Range Fare	-
Contacts:	-
Pilot sites:	Castilla y León
Description:	Demand-response transport model established in the latter region in 2004
Main Goal:	GMV aim to meet the variable transport needs of populations scattered in rural areas. The service allows cities and villages to be connected to each other.
Key Technologies:	Website, ITS
Relevant Outcomes:	In Europe GMV has also established a similar system in Portugal, in Molina de Aragón (Guadalajara) and has also been integrated into the ITS developed for the Polish city of Szczecin, demonstrating the effectiveness and economic viability of this model of public transport in the rural world.

Project Name:	Kiuksys Move on

Code Category	SM - M
Official Website:	https://www.kiunsys.com/it/
Led by:	Kiunsys
Start date:	2015
2019	ongoing
Budget:	€ 505.000 (Crowfunding in 2015)
Fare	
Range Fare	-
Contacts:	-
Pilot sites:	80 cities in Europe
Description:	Kiunsys specializes in the design and production of technologies to implement advanced projects of Smart Mobility, Smart Parking and City Logistics revolutionizes mobility control and management, Manage the various aspects of mobility including congestion charge rates, parking or city logistics and integrate, with wireless technology, existing infrastructure such as parking meters. Easily monitor revenue streams through integration with online and offline payment tools. With APIs, mobile roadside control devices automate workflows and reduce repetitive and time-consuming tasks.
Main Goal:	allow sharing essential information directly with citizens. Kiunsys offers products able to manage and monitoring easily infrastructure and let it implement with a full network of sensor, in order to transform town into a smart city. The service leans on could where data are collected, so it is able to operate
Key Technologies:	Website, app and more
Relevant Outcomes:	

Project Name:	Ramses – On the road/Rural mobility 2.0
Code Category	SM - M
Official Website:	https://www.ruralmobility.eu
Led by:	The RAMSES-Platform ,on-the-go - rural mobility 2.0 (9 partners)
Start date:	2015
2019	ongoing
Budget:	

Fare	
Range Fare	-
Contacts:	moraglio@ruralmobility.eu henseler@ruralmobility.eu
Pilot sites:	Baden-Württemberg
Description:	Buses for citizens, cars, carpools and sharing offers: together on a digital platform. The components of the platform are: - Route planning Multimodal timetable information - Mission planning - Vehicle or fleet management - Accounting - Monitoring - Communication
Main Goal:	On the road offers them an IT-based mobility platform with a smartphone interface because of rural mobility service providers often lack the digital infrastructure to support the implementation and marketing of their services.
Key Technologies:	Website, app, ITS
Relevant Outcomes:	

Project Name:	ICT Practices
Code Category	SM - ICT
Official Website:	https://trimis.ec.europa.eu/programme/interreg-iv-transnational-programmes
Led by:	Northern Periphery Programme
Start date:	2007
2019	2013
Budget:	European Funding
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Northern fringe of Europe, Iceland,Scotland
Description:	New (Rural) Transport, Solutions Action Model Fjardabyggd, platform web Access to Knowledge are three practices about the implementation of ICT in mobility field supported by Northern program. The areas have been covered by digital

	techonologies to support rural mobility.
Main Goal:	A web based interactive toolkit on how to plan and develop public transport services in sparsely populated areas summarising the experiences and results of the RTS work.. A new web page compiling information about public transportation for all available trips in Fjardabyggd, including car sharing and car pooling software and application
Key Technologies:	Website, app, C-ITS
Relevant Outcomes:	

Project Name:	Marketing and Communication Strategy Fjardabyggd
Code Category	SM – M&C
Official Website:	https://trimis.ec.europa.eu/programme/interreg-iv-transnational-programmes
Led by:	Northern Periphery Programme
Start date:	2007
2019	2013
Budget:	European Funding
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Northern fringe of Europe, Iceland,Scotland
Description:	New (Rural) Transport, Solutions Action Model Fjardabyggd, platform web Access to Knowledge are three practices about the implementation of ICT in mobility field supported by Northern program. The areas have been covered by digital techonologies to support rural mobility.
Main Goal:	A marketing strategy for the public transport system in Fjardabyggd targeted to different market groups.
Key Technologies:	Website, ITS
Relevant Outcomes:	

Project Name:	Shetland's Internal Public Transport Network Program
Code Category	SM – CS
Official Website:	https://www.shetland.gov.uk/transport/
Led by:	Shetland Islands Council
Start date:	2007
2019	2013
Budget:	Shetland Islands Council
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Northern fringe of Europe, Iceland,Scotland
Description:	A consultancy service including research, assessing, planning, consulting and contracting using the innovative opportunity to package contracts together to ensure the contracting of equal levels of service across an entire region with a sparsely located population to meet the needs of that population
Main Goal:	develop innovative and sustainable rural and coastal transport schemes and services reducing social exclusion and enhancing the vitality and sustainability of sparsely populated areas in Northern Periphery
Key Technologies:	Website, ITS
Relevant Outcomes:	

Project Name:	Pielinen Karelia Public Transport Coordinator
Code Category	SM – CS
Official Website:	https://www.koli.fi
Led by:	Shetland Islands Council
Start date:	2007
2019	2013

Budget:	Public Funding
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Koli (Finland)
Description:	A consultancy service to improve the co-ordination of public transport by developing partnerships, developing more integrated transport
Main Goal:	develop innovative and sustainable rural and coastal transport schemes and services reducing social exclusion and enhancing the vitality and sustainability of sparsely populated areas in Northern Periphery
Key Technologies:	Website, ITS
Relevant Outcomes:	

Project Name:	Rural Transport Solutions
Code Category	SM – SPT
Official Website:	https://www.koli.fi
Led by:	Local Govenrment
Start date:	2007
2019	2013
Budget:	Public Funding
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Wigtownshire (Scotland), Dumfries and Galloway, Finland, Sweden e Iceland
Description:	A new model of co-operation between the local partners and community transport providers in the region
Main Goal:	This will allow the transport service to grow under a centralised transport provision system for increased co-ordination, sharing, integration and management and the users to access transport services through one point of contact.
Key Technologies:	Website, ITS
Relevant Outcomes:	

Project Name:	ZetTrans Car Sharing
Code Category	SM – CS
Official Website:	https://www.koli.fi
Led by:	ZetTrans In partnership with the HITRANS
Start date:	2016
2019	ongoing
Budget:	
Fare	
Range Fare	-
Contacts:	
Pilot sites:	The Shetland Isles (Scotland)
Description:	In partnership with the HITRANS, ZetTrans have launched an online car-sharing database. The service is accessible to anyone and can be used for both regular commuter trips as well as one off journeys
Main Goal:	allows people in Shetland to register their daily journey details online and search for others who are traveling similar routes and looking to car-share.
Key Technologies:	Website, app, ITS
Relevant Outcomes:	

MaaS

Project Name:	Mytravelplan
Code Category	MaaS – SPT
Official Website:	mambaproject.eu
Led by:	MAMBA PROJECT
Start date:	2017
2019	ongoing
Budget:	Public and private
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Denmark
Description:	Combined mobility solution currently being developed by the Transport Authority of Northern Denmark (Nordjyllands Trafikselskab).
Main Goal:	Mytravelplan is a pilot project, offering the journeyplanner of the future and it aim is to improve mobility and access to services for residents in rural areas where public transport is limited to rush hours – while reducing dependence on private cars. The new mobile app will guide users to the most convenient and cheapest mobility services available on a selected route from A to B – public as well as private options (e.g. carpools, shared cars, ferries, taxis, and transport-on-demand busses)
Key Technologies:	Website, app
Relevant Outcomes:	

Project Name:	Urbi
Code Category	MaaS – SPT
Official Website:	https://www.imove-project.eu

Led by:	PROGETTO IMOVE
Start date:	2013
2019	ongoing
Budget:	private
Fare	
Range Fare	-
Contacts:	
Pilot sites:	Turin
Description:	This simple app helps you find the fastest, cheapest or most comfortable way to your destination. It's currently active in all major cities in Italy, Spain and Germany as well as in Copenhagen, Amsterdam, Stockholm, Vienna and Paris.
Main Goal:	URBI is a urban mobility services aggregator that allows people to find and book the best solution to reach a destination comparing all available options: car, scooter and bike sharing as well as taxis and ride sharing.
Key Technologies:	Website, app,ITS
Relevant Outcomes:	Is now part of the Telepass group (Telepass S.p.A. is the company in the Atlantia Group which offers electronic payment services for urban and suburban mobility)

Project Name:	UbiGO
Code Category	MaaS – SPT
Official Website:	https://www.ubigo.me/om-ubigo
Led by:	PROGETTO IMOVE
Start date:	2013
2019	ongoing
Budget:	private
Fare	

Range Fare	-
Contacts:	
Pilot sites:	Gothenburg (2013), Stockholm (2019)
Description:	UbiGo is an app to rent a car,call a taxi or go for leisure,stations or everywhere.
Main Goal:	URBI is a urban mobility services aggregator that allows people to find and book the best solution to reach a destination comparing all available options: car, scooter and bike sharing as well as taxis and ride sharing.
Key Technologies:	Website, app
Relevant Outcomes:	

Project Name:	Toyota MaaS
Code Category	MaaS – RS
Official Website:	https://global.toyota
Led by:	Toyota - Didi Chuxing
Start date:	2019
2019	-
Budget:	private
Fare	
Range Fare	-
Contacts:	
Pilot sites:	On at planning stage
Description:	Partnership between private companies involved in MaaS mobility. Establishment of a joint venture for vehicle-related services for ride-hailing drivers, and investment in DiDi and joint venture
Main Goal:	Toyota and Didi offers vehicle leasing service and various services for DiDi ride-hailing drivers
Key Technologies:	Website, app,ITS,IOT
Relevant Outcomes:	

Project Name:	Whim 
Code Category	MaaS – MMT
Official Website:	https://maas.global/
Led by:	Whim - Maas Global
Start date:	2016
2019	-
Budget:	private
Fare	Different subscriptions
Range Fare	€ 2.80-4.60
Contacts:	
Pilot sites:	Finland,Antwerp,Birmingham
Description:	Startup Whim as Maas brings every kind of transport together into a single intuitive mobile app, bus,tram,taxi,car bike etc.
Main Goal:	Multimodality, pay-as-you go, digital ticketing
Key Technologies:	Website, app,ITS
Relevant Outcomes:	

Project Name:	E-palette 
Code Category	MaaS – SD
Official Website:	https://global.toyota/
Led by:	Toyota
Start date:	2019
2019	-
Budget:	private
Fare	
Range Fare	
Contacts:	

Pilot sites:	agreement signed, at the planning stage
Description:	Self driving shuttle to travel via multiple transport modes including public transport, taxis and carshare
Main Goal:	Multimodality, pay-as-you go, digital ticketing
Key Technologies:	Website, app
Relevant Outcomes:	

Project Name:	ViaVerde Planner
Code Category	MaaS – SPT
Official Website:	https://blog.door2door.io
Led by:	Door 2 Door
Start date:	2019
2019	-
Budget:	private
Fare	
Range Fare	
Contacts:	
Pilot sites:	Lisbon, Porto (Portugal)
Description:	Multimodal route planner app which integrates mode of transportation in Lisbon and Porto including taxi,metro,ferry,Public Transport as well as private providers as DriveNow,Cabify,mytaxi,Gira(bike sharing), eCooltra (scootersharing)
Main Goal:	By Via Verde Planner app users can quickly plan routes finding the most convenient connections between Lisbon and Porto. The app allows multimodal transport let users compare each avaible transport solutions in their surroundings to their destinations based on price,travel time and distance. It integrates CP the opertor of passengers trains and RNE the operator of long-distance buses in Portugal.
Key Technologies:	Website, app

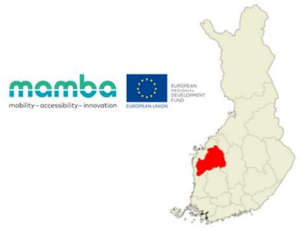
Relevant Outcomes:	

Project Name:	Move me Brescia
Code Category	MaaS – SPT
Official Website:	https://blog.door2door.io
Led by:	Arriva-Deutsche Bahn, Brescia Mobilità SpA e Door2Door GmbH
Start date:	2017
2019	-
Budget:	private
Fare	
Range Fare	
Contacts:	
Pilot sites:	Brescia
Description:	The location function allows you to view the opportunities for movement in the surroundings of your location: the nearest public transport stops, the next ones are in the bus and subway departures, the real-time number of bicycles available in one of over 70 "Bicimia" stations, free parking spaces in the car parks.
Main Goal:	offers a simple and fast overview of all possible travel solutions to travel to Brescia and its province, choosing between public transport, bike sharing, taxi, car or walking routes.
Key Technologies:	Website, app
Relevant Outcomes:	

Project Name:	MVMANT Smart Mobility Platform 
Code Category	MaaS - MMT
Official Website:	https://www.mvmant.it/
Led by:	MVMANT
Start date:	2016 (commercial launch: January 2018)
End date:	ongoing
Budget:	-
Fare	
Range Fare	
Contacts:	-
Pilot sites:	Venice (ITA), Dubai (UAE)
Description:	new urban mobility on-demand solution
Main Goal:	reduce traffic and congestion and offer efficient and economically viable collective transport to achieve ever more pressing political and environmental objectives
Key Technologies:	ICT, Apps,AI,IOT
Relevant Outcomes:	Italian Innovation award of the awards, National Service Innovation Award, Environmentally Friendly Innovation Award,

Project Name:	MyDVG
Code Category	MaaS - MMT
Official Website:	https://www.door2door.io/
Led by:	Duisburg's public transport company - Duisburger Verkehrsgesellschaft (DVG) & Door2door

Start date:	Start of cooperation (2016), Launch of app (2019)
End date:	ongoing
Budget:	-
Fare	
Range Fare	€ 2-3
Contacts:	-
Pilot sites:	Duisburg, Germany
Description:	With the new multimodal app myDVG, passengers can compare all available means of transport in real time at a glance, buy tickets directly in the app and always make the best choice. Transport modes include bus, train, myBUS, bike rental and taxi.
Main Goal:	implemented on-demand ridepooling
Key Technologies:	ICT, Apps
Relevant Outcomes:	Using door2door's Mobility Analytics tool, DVG was able to implement the expansion promptly and effectively. Mobility Analytics provides data-driven simulations of ridepooling services that helped to quickly define the right service design and the right number of vehicles needed to serve people optimally, while at the same time achieving a good pooling rate.

Project Name:	MAMBA in South Ostrobothnia 
Code Category	MaaS - SPT
Official Website:	mambaproject.eu
Led by:	MAMBA PROJECT
Start date:	2017
End date:	2020
Budget:	3,54 M€
Fare	
Range Fare	
Contacts:	beatrice.siemons@kreis-ploen.de

Pilot sites:	County of Plön, Germany
Description:	The service has already been tested in other German regions, but this is the first time in the county of Plön.
Main Goal:	This pilot action will establish a transport-on-demand service in Plön by offering taxis to and from major bus stops. The aim is to increase the supply and use of public transport in rural areas, especially in the evenings and on weekends.
Key Technologies:	ICT, Apps
Relevant Outcomes:	

Project Name:	MAMBA in Vidzeme Planning Region
Code Category	MaaS - SPT
Official Website:	mambaproject.eu
Led by:	MAMBA PROJECT
Start date:	2017
End date:	2020
Budget:	3,54 M€
Fare	
Range Fare	
Contacts:	beatrice.siemons@kreis-ploen.de
Pilot sites:	Vidzeme Planning Region
Description:	two municipalities of Vidzeme region showed high interest to become pilot territories. Both of them are located in the border area with low population density and with poor public transport service – either buses are running very rarely or there are no bus traffic at all.
Main Goal:	the model will be formed by the local inhabitants themselves and the trips will be based on their mobility needs. Inhabitants will be able to use ToD service in whole county area, also on weekends. Meanwhile in Alūksne area ToD will be piloted in concrete territories and the trips will be fixed by days for each of the territory. In both cases the service is designed closely with the local communities, including representatives of the municipalities as well as the end-users themselves

	to be sure the planned service will meet the needs and will be highly used when the service will be launched. The planned service will increase residents` access to local transport hubs as well as essential community and medical services, library, schools, recreation, etc.
Key Technologies:	ICT, Apps
Relevant Outcomes:	

Project Name:	MAMBA in Municipality of Vejle 
Code Category	MaaS - SPT
Official Website:	mambaproject.eu
Led by:	MAMBA PROJECT
Start date:	2017
End date:	2020
Budget:	3,54 M€
Fare	
Range Fare	
Contacts:	inmto@vejle.dk
Pilot sites:	Municipality of Vejle and the South Denmark region
Description:	development of a user-friendly mobile application
Main Goal:	Mobility Centre will be established to integrate existing mobility options and create a platform where citizens can easily get an overview of available mobility services and order transport-on-demand rides.
Key Technologies:	ICT, Apps
Relevant Outcomes:	