



Taxis in the future mobility chain

**Satisfying the needs  
of vulnerable to exclusion user groups**

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# Transport poverty: a definition

An individual is **transport poor** if, in order to satisfy their daily basic activity needs, at least one of the following conditions apply:

				
<b>Availability:</b>	<b>Accessibility:</b>	<b>Affordability:</b>	<b>Time budget:</b>	<b>Adequacy:</b>
No suitable transport option available	Transport options do not reach destinations and opportunities	High cost burden	Excessive amount of time in travel	Travel conditions are dangerous, unsafe or unhealthy for the individual.
				

Source: Own elaboration after Lucas et al 2016

# Addressing the needs of potentially vulnerable to exclusion user groups



Children and youth



Elderly



Women



People with reduced mobility



Migrants and ethnic minorities



People living in rural and deprived areas



Low income and unemployed

# Geographical and spatial elements affecting the “transport poverty”



Rural



Peri-urban



Urban peripheral



Remote



Deprived

# Low income and unemployed



Low income  
and unemployed

- particularly **reliant on local public transport services**, since in many cases they cannot afford a private car or other means of transport
- the **use of cars is closely related to income levels**
- in remote areas often rely on private vehicles, posing a substantial financial burden on households (**forced car ownership**)
- often confronted with the need to **walk and cycle in unsafe conditions** for longer periods and routes
- availability of public transport and **affordable fares** affect **employment opportunities** and access to basic services
- **less mobile**, limiting themselves to those compulsory trips, such as to work, health services or food shops



# Elderly



Elderly

- **public transport plays a crucial role**, especially in rural areas, supporting an independent life and access to basic services, and reducing social isolation
- even if elderly travel less than young people, **increased transport demand**, resulting from improved health, more travelling options, better foreign-language skills, and lifestyles (“forever young” megatrend)
- experience mobility limitations caused by **increasing cognitive problems and physical impairments**
- in using public transport, face **many transport-related barriers** linked to difficulties in reaching bus stops or **accessing vehicles**, fear of falling and apprehensions about personal **security**, difficulties in **reading timetables and destinations**
- **high levels of car ownership can hinder the transition to other means of transportation** that could somewhat compensate

# People with reduced mobility



People with reduced mobility

- **wide diversity of impairments:** reduced vision, reduced hearing, reduced movement, psychologically/mentally cognitively challenged
- **travel less** than non-disabled even if they have similar needs
- **rely on private transport** and **depend on the support of relatives**
- access to transport has a significant impact on the **quality of life and independence**
- **less likely to benefit from access to standard transport options** if they are not designed taking their needs into account
- **dedicated transportation services** can improve mobility, but lead to the exclusion from regular public transport
- **accessible transport information** systems relevant for people with sensory impairment or learning disabilities

# Women and gender related aspects



Women

- **more likely to use public transportation than men** (in general less access to private vehicles)
- **public transport plays a crucial role** in empowerment, access to opportunities and independence
- poor mobility and access to transport can **prevent women from entering the labour market** or lead to choose less profitable jobs because they are closer to home or easier to travel to
- engaged in childcare, domestic work and caring for elderly, sick or disabled relatives and therefore **more likely to work part-time**, take on jobs nearer or better connected to home (even if low-paid), or to decide not to work at all
- **more likely to combine trips/make trip chains** than to make separate trips: commuter services may cater less to women



# Migrants and ethnic minorities



Migrants and  
ethnic minorities

- **less likely to own a car** than natives, owing to their less favourable economic conditions (buying a car and getting a driver's license is costly)
- **car access is lower among female migrants** than among males, the gender gap being wider than that observed in the case of natives
- **more likely to walk and to use public transport** than natives, even if female migrants may find the latter less comfortable because of **security issues**
- **cycling appears to be more popular among natives** than among migrants, especially women
- **language barriers** and racial/religious **discrimination**

# Children and young people



Children and youth

- **independent mobility has seemingly declined:** negative impacts on children's health and safety of increased traffic and reduced independent mobility and walking
- especially pupils and students, are the **most frequent users of public transportation**
- **car use is increasing less than before**, or even declining, for young people who seem to be less car-oriented than previous generations
- new status symbols are not cars but **internet and phones**
- **cycling** is more fashionable amongst young urban professionals than driving
- poor availability of public transport and high fares may **prevent young people from having access to education**, work and social interactions, especially for those living in rural areas and /or low-income families

# People living in rural and deprived areas



People living in rural  
and deprived areas

- wide variation in PT use with respect to the level of urbanisation: **residents in large towns are almost twice as likely to use urban public transport** as those in small to middle-sized or in rural villages
- observed differences in the use of public transport reflect not only the **availability**, but also the **accessibility**, of public transport in terms of proximity to bus, metro or tram stations
- in rural areas **mobility needs are mostly satisfied by the use of cars**
- people living in remote and low-density rural areas usually have to cope with **poor and infrequent public transport services**

# Main mobility barriers affecting vulnerable to exclusion user groups

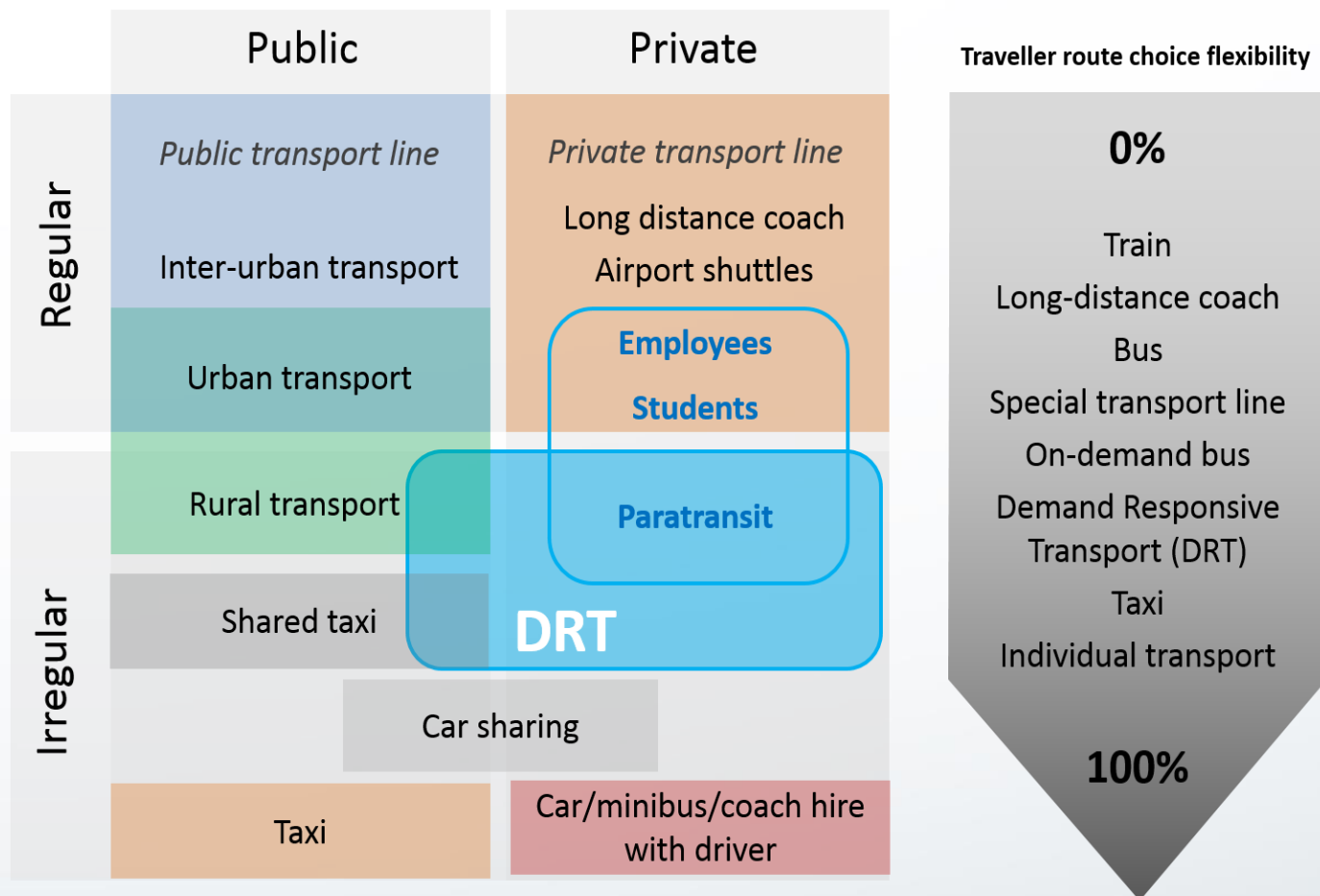
Depending on the needs of different social groups, some conditions are more important than others

SOCIAL GROUPS	AVAILABILITY	ACCESSIBILITY	AFFORDABILITY	TIME-BUDGET	ADEQUACY
Low income and unemployed	✓	✓	✓	✓	
Elderly people		✓			✓
People with reduced mobility		✓		✓	✓
Women	✓	✓		✓	✓
Migrants and ethnic minorities			✓	✓	✓
Children and young people	✓		✓		✓
People living in rural and deprived areas	✓	✓	✓	✓	

# How inclusive mobility is provided in Europe

- **Publicly contracted mobility services**
  - Conventional public transport
  - Demand-responsive public transport
  - Transport for people with reduced mobility
  - School transport
  - Incentives and subsidies for unemployed and low-income people
- **Market-based mobility services**
  - Taxis
  - Private hire vehicles (car/van)
  - Services from Transportation Network Companies (i.e. ride hailing)
  - Vehicle sharing (car/bike)
- **Community-based mobility options**
  - Community Transport Services (CTS)
  - Citizen Bus
  - Peer-to-peer ride sharing (carpooling)
  - Community car initiatives
  - Peer-to-peer car sharing

# How inclusive mobility is provided in Europe



Source: adapted from AMTU, 2015



# Publicly contracted mobility services 1/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Conventional public transport</b>	<p>Service of general interest (SGEI)</p> <p>Already present in many areas although not always adequate</p> <p>Universal from of transport (access to PT services is a form of social inclusion)</p> <p>Fare reductions and free pass for vulnerable users widely implemented</p>	<p>Under increasing pressure due to cuts in subsidies</p> <p>Service not available, limited hours of operation or low frequencies in certain priority areas (e.g. rural/peripheral)</p> <p>Infrastructures and vehicles not accessible to people with reduced mobility especially on inter-urban links and rural areas</p> <p>Inclusive elements not adequately embedded in PSO contracts (apart for universal design)</p>
<b>Demand-responsive public transport</b>	<p>Allows adaptability of the PT system and integration with small operators (i.e. contracted taxis/PHVs)</p> <p>Demand-based and flexible transport option</p> <p>Particularly suited for rural areas</p> <p>Can be combined with other dedicated services (e.g. school or special needs transport)</p>	<p>Need to estimate in advance the level of service in km driven (to fit into current PSO contracts)</p> <p>Insufficient and episodic public funding</p> <p>Higher operative cost (but higher willingness to pay from the users)</p> <p>Booking, planning and dispatching system can be very expensive</p>

# Publicly contracted mobility services 2/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Transport for people with reduced mobility</b>	<p>Organised as DRT</p> <p>Often operated by CTS organisations</p> <p>Fundamental for people not able to use conventional public transport</p> <p>Public funding from different bodies already available (especially from national health or social services)</p>	<p>Often designed only for medical or educational purposes (and not also for maintaining social contacts)</p> <p>Segregated service not integrated with the PT system</p> <p>Lack of image and visibility</p>
<b>School transport</b>	<p>Mix of schemes and solutions: from conventional PT usage to door-to-door “yellow” school buses</p> <p>Free for compulsory school aged children</p> <p>Funded from educational public budgets</p> <p>Often under direct responsibility of municipalities</p>	<p>Purpose built “yellow” vehicles not suited for other services</p> <p>Higher operative costs when on-board assistance is requested</p> <p>Hybrid services (school + other purposes transport) not sufficiently tested and implemented</p>
<b>Incentives and subsidies for unemployed and low-income people</b>	<p>Promote job access and sustain the family income</p> <p>Provided as reduced PT/taxi fares or free public transport pass but also through direct monetary incentives</p>	<p>Mainly focused on public transport</p>

# Market-based mobility services 1/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Taxis</b>	<p>Door-to-door transport public service</p> <p>Users can hail a taxi on the street, find at ranks/stands or pre-book via a dispatching centre (by telephone or smartphones)</p> <p>Can be contracted from public authorities for demand-responsive PT or dedicated transport (e.g. schools)</p>	<p>Higher price for the final user (compared to PT)</p> <p>Operate under detailed and strict regulations</p> <p>Present only in sufficiently dense urban areas</p> <p>Often not accessible to people with reduced mobility</p>
<b>Private hire vehicles (car/van)</b>	<p>Door-to-door transport private service</p> <p>Operates on the basis of pre-negotiated fares and pre-arranged reservations</p> <p>Obligation to start from and return to their base</p> <p>Operate under less strict regulations (compared to taxis)</p>	<p>Typically covers only temporary or occasional transport needs</p> <p>Small companies not able to manage large fleets nor complex IT systems</p> <p>Often not accessible to people with reduced mobility</p>

# Market-based mobility services 2/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Services from Transportation Network Companies (i.e. ride hailing)</b>	<p>Managed by intermediaries owning digital platforms and smartphone applications to bundle and combine transport requests</p> <p>Operated by affiliated professional companies or non-professional drivers</p> <p>Work on a global scale</p> <p>New business model contributing to expand the taxi/PHV markets</p> <p>Ride hailing services can cover also daily mobility needs</p>	<p>Do not fall under established regulatory structures</p> <p>Unfair competition from non-licensed private drivers</p> <p>Needs large initial private investments</p> <p>Not present in priority areas</p>
<b>Vehicle sharing (car/bike)</b>	<p>Temporary use of vehicles that are also used by other people</p> <p>Operates as station-based or free floating</p>	<p>Need to book in advance</p> <p>Do not offer discounted fares for vulnerable groups of users</p> <p>Often not accessible to people with reduced mobility</p> <p>Absent or not extended to priority areas</p> <p>Require a credit card</p>

# Community-based mobility options 1/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Community Transport Services (CTS)</b>	<p>General term that envelops several forms of transport services (rural, medical, school, special)</p> <p>Run by established charities and social businesses</p> <p>Drivers can be jobseekers or people receiving social welfare</p>	<p>Possible overlaps with conventional/DRT public transport and market-based services</p>
<b>Citizen Bus</b>	<p>Community-owned bus services</p> <p>The public authority provides the vehicle for free and pay for certain running costs (fuel, insurance)</p> <p>Drivers are volunteers citizens</p>	<p>Typically limited to the transport of elderly people</p> <p>Operated rural areas not served by regular bus stops</p> <p>Concept limited to some countries (Germany, the Netherlands, UK)</p>

# Community-based mobility options 2/2

MOBILITY SERVICE OR OPTION	KEY ELEMENTS AND ADVANTAGES	MAJOR LIMITS AND DRAWBACKS
<b>Peer-to-peer ride sharing (carpooling)</b>	<p>Sharing of a car trip between two or more persons of which one of the persons is the owner of the vehicle</p> <p>Can be implemented informally among individuals, via open/community-based apps or carpool clubs</p> <p>Need a prior schedule or reservation</p>	<p>Informal carpool often implemented by closed groups (friends, colleagues)</p> <p>Limited to regular commuting trips</p> <p>Psychological barrier of riding with strangers</p>
<b>Community car initiatives</b>	<p>Cars that are jointly bought or leased by a group of local citizens, as part of an association or not</p> <p>Can be also implemented by local authorities allowing the use of their own vehicles (when not used for public service purposes) to residents and vulnerable users</p>	<p>Need a prior reservation and clear "rules of the game" including ownership and responsibility issues</p> <p>Often limited to avoid "second car" ownership</p>
<b>Peer-to-peer car sharing</b>	<p>The shared car is owned by a private individual that participates in the P2P car sharing scheme</p> <p>Main motivation for those who rent out their cars is often economic</p>	<p>Need a prior reservation and clear "rules of the game" including ownership and responsibility issues</p>



# Limits and drawbacks of the current transport offer (1/2)

## Flexible and inclusive mobility options still not a key component of the transport system

- **Public transport** play a crucial role (many vulnerable groups are more like to use it)
- Inclusive notion of public transport should consider **more flexible and integrated schemes**, combining all forms of PT (including taxi) – with complementary or additional services
- **National frameworks** (competent authorities, level of competition and available funding) can influence the provision of inclusive mobility options

## Limits of different regulations

- **Existing regulation is mode-specific** (different rules apply to taxi services, education transport, community transport, bus transport, seated patient transport, etc.)
- Implications on many levels e.g. driver licensing, operator licensing, route licensing, tax, VAT, insurance, eligibility for public subsidy, whether a fare can be charged, etc.
- **Possible issues** include: taxis and private hire vehicles (PHVs) not being allowed to operate 'out of area'; PT funding only being possible for bus operators and not for taxis or PHVs etc.

# Limits and drawbacks of the current transport offer (2/2)

## Absence of a well-balanced and fair competition

- Quite often bids are not adapted to allow the **participation of small local companies** with larger operators typically acting as monopolist as a result
- **App-based ride-hailing services**, mainly managed by Transportation Network Companies (TNC) have successfully tested new business models innovating the traditional taxi market segments and mobilising numerous taxi and car-hire with driver companies
- The advantages and benefits of these new options are not properly analysed in conjunction with **competitive issues and working conditions**

## Lack of adequacy of available mobility options

- Collective vehicles, particularly smaller ones including taxis, should be **properly equipped to accommodate different needs** (e.g. transport of children and people with reduced mobility)
- Creating **awareness by means of information and education** (how does the system work, who is eligible to use it, what does it cost etc.) and a good marketing strategy: flexible transport services are not very visible or present 'on the street'

# Our project: what we are doing



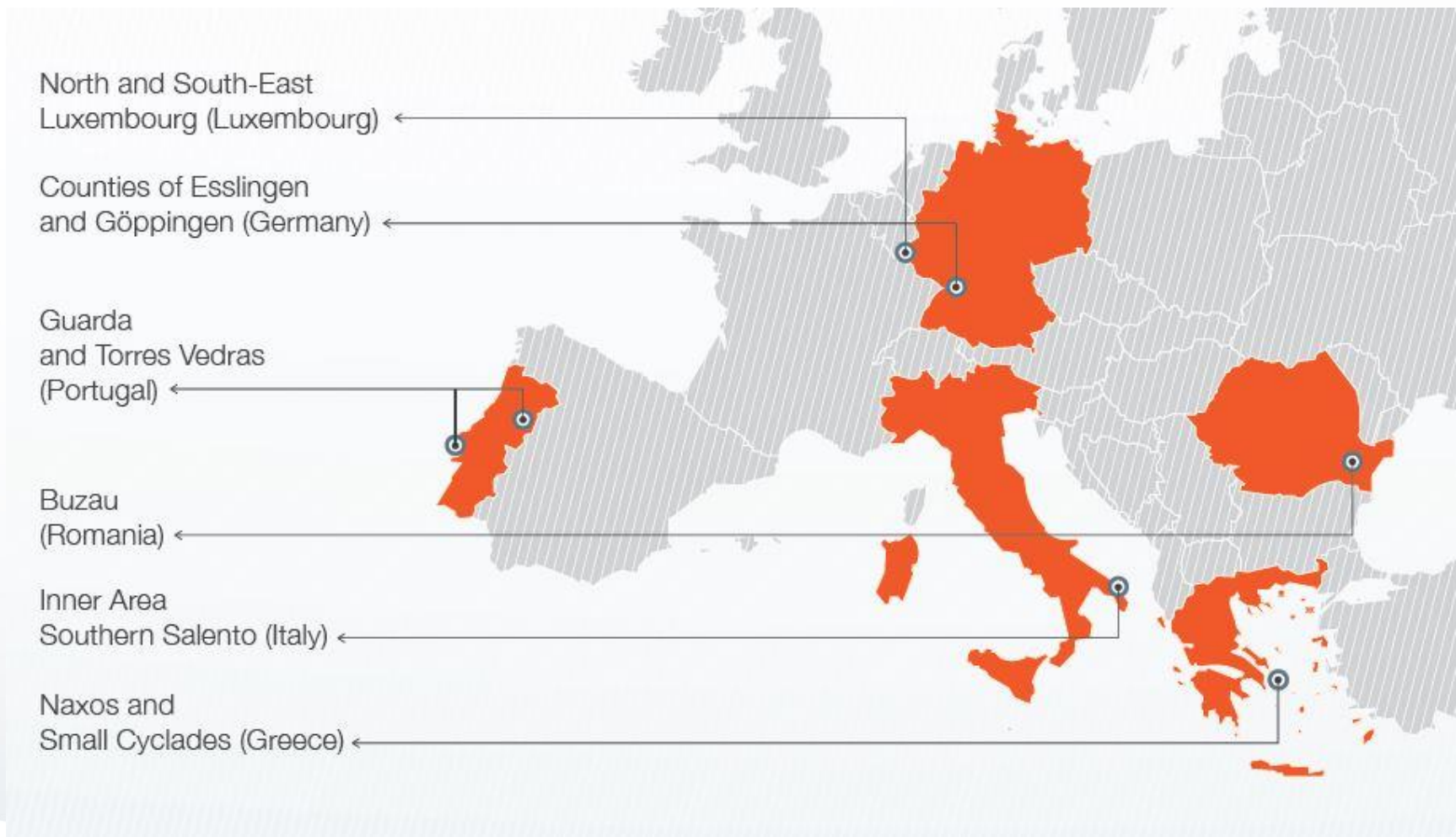
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H2020 Research and Innovation Action (RIA) - Topic MG-8.4-2017,  
***“Improving accessibility, inclusive mobility and equity: new tools and business models for public transport in prioritised areas”***



3-years: **Oct 2017- Sept 2020**

# Fieldwork in 6 study regions across Europe



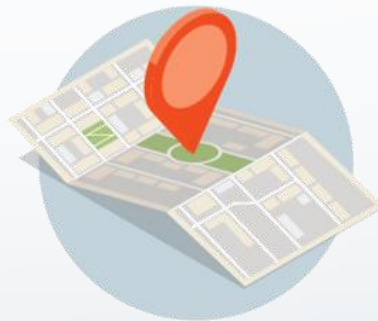
# Final goal: explore and develop new business models for collective passenger transport

USER-ORIENTED and not a technology push approach

- Small scale, modular and easily replicable mobility services provided at affordable prices or with minimum subsidies
- Bundling and mixing dispersed, special and non-coordinated trip requests and needs



Informal ride-sharing and van pooling



Community transport services



Innovative ride-hailing mobility services



On demand flexible public transport

# Key outputs and how to get involved



**18** Focus Group workshops



Insights package  
Solutions to transport poverty for startups



European multidisciplinary workshop



Showcase event

## Startup Lab



**20**

startups to benefit from a one-week follow-up period

**5**

startups to benefit from an in-depth three-month follow-up period

**4**

new inclusive mobility solutions being tested



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**HiReach**

innovative mobility  
solutions to cope  
with transport poverty

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